

# Journal of the Royal Society of Arts

---

NO. 5037

AUGUST 1959

VOL. CVII

---

## *PRESENTATION OF THE ALBERT MEDAL*

At a ceremony held in Government House, Ottawa, on 1st July, His Royal Highness the Duke of Edinburgh, President of the Society, presented the Albert Medal for 1959 to the Rt. Honble. Vincent Massey, C.H., Governor-General of Canada. As announced in the June issue of the *Journal*, the medal was awarded to Mr. Massey 'for his distinguished encouragement of the arts and sciences'.

On the same occasion the President also presented a diploma of Fellowship of the Society to the Prime Minister of Canada, the Rt. Honble. John Diefenbaker, Q.C.

Dr. E. P. Weeks, the Society's Honorary Corresponding Member for Ottawa and District, attended the ceremony in place of Colonel W. J. Brown, the Honorary Corresponding Member for Canada (who was indisposed), and had the honour of being presented to His Royal Highness.

## *ELECTION OF CHAIRMAN OF COUNCIL*

At the meeting of Council on Monday, 15th July, Mr. Oswald P. Milne, F.R.I.B.A., J.P., was unanimously elected Chairman of Council for the year 1959-60.

## *COMPANIES IN ASSOCIATION WITH THE SOCIETY*

As will be seen from the report of the Annual General Meeting published elsewhere in this issue, new Bye-laws have now been adopted which permit limited liability companies and other trading bodies, both in this country and overseas, to be admitted to the Society as Companies in association.

In order to ensure the success of this project, it is desirable that it should be built on as broad a basis as possible and that the first published list of admissions in October should be fully representative of industry and commerce. It would be appreciated, therefore, if Fellows who are in a position to do so would be good enough to bring this matter to the notice of firms on whose Board of Directors they serve.

A pamphlet setting out the full advantages to be enjoyed by Companies in association, together with a form of application, will be sent on request.

*INDUSTRIAL ART BURSARIES COMPETITION,  
1959*

Full particulars of the Competition to be held in the autumn of 1959 have now been published. The following sections will be included and, except where otherwise stated, one Bursary of £150 will be offered in each:

DOMESTIC ELECTRICAL APPLIANCES	LAMINATED PLASTICS
ELECTRIC LIGHT FITTINGS	FILM, STAGE AND TELEVISION SETTINGS
DOMESTIC SOLID-FUEL-BURNING	(THREE BURSARIES)
APPLIANCES	FOOTWEAR
CARPETS	FLAT GLASS DECORATION
DRESS TEXTILES (THREE BURSARIES)	FURNITURE (SIX BURSARIES)
FURNISHING TEXTILES	PACKAGING
WOMEN'S FASHION WEAR (TWO TALFO AWARDS OF £200 AND £150 RESPECTIVELY)	POTTERY
ACRYLIC SHEET ('PERSPEX')	TYPOGRAPHY
	WALL-PAPER

In addition to the above Bursaries, the Council of the Society may provide supplementary awards from the Art Congress Studentship Trust Fund and from the Owen Jones Memorial Trust Fund. A George M. Whiley Bursary, of £150 in value, is also offered to a candidate in any section of the Competition, and a special additional award, of £50 in value, may be made to a candidate in the Dress Textiles Section. Associate Membership of the Society will, subject to certain conditions, also be offered to successful candidates.

The Sir Frank Warner Memorial Medal will be awarded to the candidate submitting the best design in the Set Test in either the Furnishing Textiles, Dress Textiles or Carpet section of the Competition, if this design is considered to be of sufficient merit. The medal may be awarded to a successful candidate in addition to a Bursary.

The last day for the receipt of entry forms is 12th October, 1959. A copy of the brochure containing all particulars of the Competition may be obtained from Mr. I. Jacobs, the Bursaries officer.

*INDUSTRIAL ART BURSARIES EXHIBITION*

The winning and commended designs submitted in the 1958 Industrial Art Bursaries Competition, which were recently exhibited in the Society's Rooms, will be shown at the Belfast College of Art from 7th to 21st September; at the Newcastle-upon-Tyne College of Art and Industrial Design from 28th September to 12th October; at the Stoke-on-Trent College of Art from 19th October to 2nd November; at the Edinburgh College of Art from 9th to 23rd November; at the Birmingham College of Art from 30th November to 16th December, and at the Falmouth School of Art from 11th to 22nd January, 1960.

## THE SOCIETY'S CHRISTMAS CARD, 1959



An illustration of the subject of the Society's Christmas Card for 1959 is shown above. The artist, Miss Anna Zinkeisen, R.O.I., R.D.I., has depicted T. R. Crampton, the railway engineer (second from left, wearing an Inverness cape) with his locomotive engine, the 'Namur', in a lively winter scene. For his design of this engine, Crampton was awarded the Society's gold medal in 1846.

The card will be in full colour, and it is hoped to be able to deal with orders for it by the end of September. Unfortunately, until the printing dispute is settled it will not be possible to ascertain the cost of the cards to Fellows, but this information will be given in the *Journal* as soon as the figures can be obtained.

In the meantime it is felt that Fellows, particularly those overseas, may wish to place orders now so as to ensure delivery of the cards as early as possible. If they wish their name and address to be overprinted, they should give the exact wording they require.

## REDECORATION OF THE LIBRARY

Redecoration of the Library will begin on 1st August, and it is regretted that, until this work is completed, it will not be possible to lend books from the Society's collection. In the meantime, the Curator-Librarian will still be able to borrow books for Fellows through the National Central Library.

## MEETING OF COUNCIL

A meeting of Council was held on Monday, 13th July, 1959. Present: Mr. Oswald P. Milne (in the Chair); Sir Hilary Blood; Sir Alfred Bossom; the Honble. G. C. H. Chubb; Sir Edward Crowe; Mr. R. E. Dangerfield; Mr. P. A. le Neve Foster; Mr. E. Maxwell Fry; Mr. John Gloag; Sir Ernest Goodale; Mr. Milner Gray; Lord Latham; Mr. Edgar E. Lawley; Sir Harry Lindsay; Mr. F. A. Mercer; Lord Nathan; the Earl of Radnor; Sir Gilbert Rennie; Mr. G. E. Tonge; Mr. Hugh A. Warren; Sir Griffith Williams and Miss Anna Zinkeisen; with Dr. K. W. Luckhurst (Secretary); Mr. G. E. Mercer (Deputy Secretary) and Mr. J. S. Skidmore (Assistant Secretary).

## ELECTIONS

The following candidates were duly elected Fellows of the Society:

Anderson, George Oswald, A.M.I.Mech.E., F.R.Ae.S., Bristol.  
 Ball, Johnson, B.Sc., A.M.I.Mech.E., Stourbridge, Worcs.  
 Banerjee, Promode, Calcutta, India.  
 Bass, Ernest Leon, M.I.Mech.E., F.R.Ae.S., Cheam, Surrey.  
 Bonner, Miss Ella Joyce, Preston, Lancs.  
 Brocksopp, Reginald Wilfred, London.  
 Bulley, Edward Stanley, A.R.C.A., Carshalton, Surrey.  
 Carlick, Robert Edward, A.R.I.B.A., Maidstone, Kent.  
 Clark, Joseph John, A.R.C.M., Wallasey, Cheshire.  
 Cowell, Maurice George, Southampton, Hants.  
 D'Artois, Arthur, New York, N.Y., U.S.A.  
 Edwards, John Leon, B.Sc.(Eng.), A.M.I.Mech.E., F.R.Ae.S., Stevenage, Herts.  
 Enabnit, Merlin, Chicago, Illinois, U.S.A.  
 Downer, Robert, London.  
 Gibbs, Bernarr, A.T.D., Burton-upon-Trent, Staffs.  
 Graham, Miss Lorna, Huddersfield, Yorks.  
 Haji, Sajjad Husain A., M.A., LL.B., Vidarbha, Bombay State, India.  
 Helmore, Roy Lionel, B.Sc., A.M.I.E.E., Exeter, Devon.  
 Hesford, Michael Bryan, L.R.A.M., A.R.C.M., Prescot, Lancs.  
 Hislop, Albert Thurlow, F.S.A.(Scot.), London.  
 Hislop, George Steedman, Ph.D., B.Sc., A.R.C.S.T., M.I.Mech.E., F.R.Ae.S., Old Coulsdon, Surrey.  
 Holterman, Francis Royston, A.R.C.A., Taunton, Somerset.  
 Hubbard, Robert Hamilton, M.A., Ph.D., Ottawa, Ontario, Canada.  
 Jack, Mrs. Sheila Ross, M.A., Durham.  
 Lamberth, Miss Joan, Stratford-upon-Avon, War.  
 Lipshitz, Lippy, Cape Town, South Africa.  
 Longley, Norman, C.B.E., Crawley, Sussex.  
 Medd, Miss Lilian Goldsmith, Chelmsford, Essex.  
 Menzies, the Right Honble. Robert Gordon, C.H., Q.C., Canberra, A.C.T., Australia.  
 McNeece, Miss Margaret Elizabeth, Blackpool, Lancs.  
 Morjaria, Dwarka, Nairobi, Kenya.  
 Murdoch, John, Workington, Cumberland.  
 Owen, David Lewis, B.Sc., London.  
 Parlanti, Miss Theodora Nina, Los Angeles, California, U.S.A.  
 Rens, David John, Kimberley, C.P., South Africa.  
 Shitta-Bey, Bashiru Akanbi, LL.B., London.

AUGUST 1959

JOURNAL OF THE ROYAL SOCIETY OF ARTS

Stafford-Clark, David, M.D., F.R.C.P., D.P.M., Woldingham, Surrey.  
Stone, Allen, New York City, N.Y., U.S.A.  
Stratford, Alan Howard, B.Sc.(Eng.), A.F.R.Ae.S., Gerrards Cross, Bucks.  
Tookey, Charles Edward, Ibadan, Nigeria.  
Upjohn Howard Emlyn, N.D.D., M.S.I.A., Hillingdon, Middx.  
Walter, Wilfrid Start, Sonning-on-Thames, Berks.  
Willis, Henry, Jr., Liverpool.  
Wilner, Miss Marie S., New York, N.Y., U.S.A.  
Wolff, Michael Gordon, M.S.I.A., London.  
Wood, Albert, Leeds.

The following candidates were elected Associate Members of the Society:

Broughton, Roger Henry, Colne, Lancs. (*Industrial Art Bursary winner.*)  
Elder, Alexander, Ballymoney, Co. Antrim, N. Ireland.  
Morris, Miss Jill Diana, N.D.D., Harrow, Middx. (*Industrial Art Bursary winner.*)  
Smith, Miss Valerie Gaynor Ida, North Harrow, Middx.

CHAIRMAN OF COUNCIL

Mr. Oswald P. Milne was elected Chairman of Council for the coming year.

CONFERENCE ON 'EDUCATION FOR YOUNG PEOPLE BETWEEN THE AGES OF 15 AND 18 YEARS'

Favourable consideration was given to the recommendation of the Special Activities Committee that the Society should organize a conference, to take place probably early in 1960, on the forthcoming report by the Central Advisory Council for Education (England) on 'Education for Young People between the Ages of 15 and 18 Years'.

PAXTON MEMORIAL TRUST

Judges were appointed to make a recommendation in due course for the award of the bursary offered under the Paxton Memorial Trust to a student of horticulture.

OTHER BUSINESS

A quantity of financial and other business was transacted.

205TH ANNUAL GENERAL MEETING

WEDNESDAY, 1ST JULY, 1959

SIR ALFRED BOSSOM, BT., LL.D., F.R.I.B.A., J.P., M.P.,  
*Chairman of Council of the Society, in the Chair*

The 205th Annual General Meeting was held on Wednesday, 1st July, 1959, at 3 p.m., at the Society's House, in accordance with the Bye-laws, for the purpose of receiving the Council's Report and the Financial Statements for 1958, for the amendment of the Bye-laws, and for the election of officers.

The Secretary read the Notice convening the meeting and proved that it had been duly exhibited and published, as required by the Bye-laws.

The Minutes of the last Annual General Meeting, held on 25th June, 1958, were then taken as read, the Secretary having summarized their contents, and were signed by the Chairman as a correct record.

*The Chairman then called upon the Secretary to summarize the Annual Report of the Council.*

## ANNUAL REPORT OF THE COUNCIL

205th SESSION 1958-9

## I. H.R.H. THE PRESIDENT

Once again this year the Society was honoured by a visit from H.R.H. the President, who came on 11th November to inspect the Society's recently furnished and redecorated extensions, and thereafter took luncheon with the Chairman and Members of Council. This was the first such gathering to take place in the new Council Chamber.

Previously, on 6th November, the Council had been bidden to Buckingham Palace, where they were privileged to take part in a short ceremony at which the Patron of the Society, Her Majesty the Queen, received the Albert Medal for 1958 from the Duke of Edinburgh.

## II. ALBERT MEDAL

With the approval of the President, the Albert Medal for 1959 was awarded to the Rt. Honble. Vincent Massey, C.H., Governor-General of Canada, 'for his distinguished encouragement of the arts and sciences'.

## III. BENJAMIN FRANKLIN MEDAL

With the approval of the President, the Council awarded the Benjamin Franklin Medal for 1959 to Mr. H. G. Nelson, Managing Director of the English Electric Company, 'for his work in scientific industrial development'.

## IV. BICENTENARY MEDAL

The Bicentenary Medal for 1959 was awarded to Mr. Frank A. Mercer, Hon.F.S.I.A.

## V. ROYAL DESIGNERS FOR INDUSTRY

Five new Royal Designers for Industry were appointed during the year: Mr. Robin Day, for furniture and exhibition design; Mr. Abram Games, for poster design; Mr. F. H. K. Henrion, for packaging and graphic design; Mr. Hans Schleger, for exhibition display and packaging; and Mr. Berthold Wolpe, for type designing and lettering. Mr. Hans J. Wegner, the Danish furniture designer, was appointed to the Honorary distinction.

Professor R. D. Russell served as Master during the year under review and was assisted by Professor R. Y. Goodden as Deputy Master. Professor Goodden has been elected to succeed Professor Russell as Master.

The ninth annual reception of the Faculty was held at the Society's House on 4th March. Mr. Walter Dorwin Teague and Mrs. Astrid Sampe, both

Honorary R.D.I.s, were the guests of honour at a Faculty dinner (the first dinner to be held in the new Council Chamber) on 6th May. The Faculty also entertained Mr. Henry Dreyfuss, the American designer, at a cocktail party on 21st May.

The Society received valuable help during the year from the Master, who advised on the furnishing and re-decoration of its extensions and designed the new Council table and chairs. Mr. Ashley Havinden advised on the design and layout of a new brochure advertising certain of the Society's recently acquired rooms for hire. As in previous years, a number of R.D.I.s have again given freely of their time and knowledge in judging designs submitted in the Society's Industrial Art Bursaries Competition.

Three members of the Faculty appeared as lecturers before the Society during the 1958-9 session. Mr. Teague delivered the Trueman Wood lecture, and Mr. Uffa Fox and Mr. Milner Gray contributed papers.

In the New Year Honours, Mr. Uffa Fox was appointed C.B.E.

#### *VI. VISITS TO NORTH AMERICA*

In the late summer and autumn of 1958 several Members of Council, including the Chairman, paid visits to North America which, although arranged primarily for personal and business reasons, afforded opportunities for promoting the work and reputation of the Society in the American Continent. Sir Alfred Bossom, in particular, when in New York, Philadelphia and Toronto, had conversations with Members of the Society, including the Honorary Corresponding Members, and in Toronto he met, among other Fellows, both Colonel Brown and Mr. Conder.

The Secretary, in an extensive tour on behalf of the Society, visited New York, Washington and other eastern United States cities and, in Canada, Toronto, London, Ottawa and Montreal, and (in the west) Victoria, Vancouver and Edmonton. Except in the visit to the west of Canada Dr. Luckhurst was accompanied by Mrs. Luckhurst. At each of the places visited the kindness of Honorary Corresponding Members and Fellows of the Society provided opportunities for the Secretary and Mrs. Luckhurst to meet members and their wives, and to speak to them informally about the present activities of the Society.

#### *VII. BENJAMIN FRANKLIN FELLOWS*

To commemorate Benjamin Franklin's lively and fruitful association with the Society and to further his ideals of international co-operation, the Society, with the approval of the President, has given serious thought to strengthening its links with the United States. Following the Secretary's visits to North America —see Section VI—it has had under detailed examination a new scheme for the election of a number of United States citizens of high standing as Benjamin Franklin Fellows, and this scheme is now receiving active consideration from a small committee of American Fellows, presided over by General Sarnoff.

As a sign of its confidence in the scheme, and in the committee which is developing it, the Council has appointed the five members of the committee as the first Benjamin Franklin Fellows. They are:

Brigadier-General David Sarnoff (*Chairman*)  
 Professor Simon Lissim (*Secretary*)  
 Brigadier-General G. L. Bliss  
 Dr. C. L. Jordan  
 Mr. Irving S. Olds

### VIII. HONORARY CORRESPONDING MEMBERS IN NORTH AMERICA

In 1955 the Council decided to extend its system of Honorary Corresponding Members in North America by the appointment in Canada of several Honorary Corresponding Members in addition to Colonel Brown (who had been appointed in 1939), and, in the United States, of Professor Simon Lissim, the first to hold this office in recent times in that country.

After the Secretary's second visit to North America, it was decided to extend this system, and the following new appointments have recently been made, viz.:

*Canada*: Montreal—A. B. Illievitz, M.D., C.M., M.Sc.  
 Ottawa—E. P. Weeks, M.A., B.Litt., D.Phil.  
 U.S.A.: Washington, D.C.—W. A. Taylor, M.Arch., F.A.I.A.  
 Boston—Bradford Williams, A.B., M.L.A.

### IX. FUTURE POLICY OF THE SOCIETY

As the result of a suggestion made by the President, the Council in December appointed a special committee 'to review the present activities of the Society with the object of ensuring that its aims are being pursued in the most suitable and rewarding manner, and to make such recommendations as may seem appropriate for the future'. Fellows have been invited by a notice in the *Journal* to assist the committee in its inquiries by forwarding information and suggestions for its consideration.

The Committee has so far held seven meetings.

As a first measure the Committee requested the Chairmen of all the major committees of the Society to report on the present activities of their committees and to put forward any suggestions they might have about their future activities. Most of these reports have now been prepared and are receiving detailed consideration.

The Committee has also examined the prospects of still further increasing the membership of the Society. It gave full consideration to and supported the proposal made by the Membership Committee for the admission of business firms into the Society as 'Companies in Association', which proposal has now been approved by the Council, and is being brought before the Society for the passing of the necessary new Bye-laws. The Committee also endorses the efforts

being made by the Membership Committee to increase membership of the Society among young people who have succeeded in passing the Society's examinations, as it entirely agrees that a determined effort should be made to increase the number of young Fellows.

The Committee has also considered the Society's Lecture Programme and has discussed with the Papers and Medals Committee a number of practical changes which it hopes will give greater effectiveness and benefit, especially on the industrial side, to the papers read before the Society.

Early in the course of its deliberations the Committee appreciated that if any new activities were to be pursued as a result of its recommendations, they would require additional money to finance them. For this reason the Committee has considered ways of increasing the Society's revenue, and in this connection has noted with concern that revenue from advertisements in the *Journal* has declined steadily over recent years. The Committee has therefore spent a good deal of time on, and is still engaged in, examining ways and means of increasing the Society's income from this source.

#### X. EXAMINATIONS

For the various examinations conducted by the Society during the Session just concluding, there has, once again, been a very satisfactory increase in the number of entries. The total for 1958-59 is 344,969, as against 270,504 in 1957-58—an increase of 74,465.

The following table gives comparative details:

		1958-59	1957-58
(a) Ordinary (Single-Subject)	...	250,807	203,306
(b) School and Senior School	...	51,873	31,603
(c) Oral Tests	...	7,424	6,249
(d) Grouped Course	...	30,842	25,637
(e) Teacher's Certificate in Shorthand	...	816	753
(f) Teacher's Certificate in Typewriting	...	508	492
(g) Road Transport Subjects	...	1,282	1,352
(h) British Transport Commission (Preliminary examination of candidates under Apprenticeship Schemes)	...	1,349	1,011
(i) Royal Air Force Administrative Apprentices (Endorsement of certificates awarded by the Air Ministry)	...	68	101
		<hr/>	<hr/>
		344,969	270,504

In recent years there has been a marked increase in the volume of work carried out by the Examinations Department, and there is every indication that this upward trend will continue. The 'bulge' in the number of children born since the end of the war is now in the lower forms of secondary schools, and this will no doubt tend in the near future to swell the entries for the School Certificate examinations and, later on, those for the Ordinary (Single-Subject) examinations.

taken by students in further education. This likelihood of further growth accentuates the importance which the Society has always attached to close liaison with the local education authorities in regard to the conduct of the examinations, and to the constant reviewing of examination syllabuses in order to keep them in line with the rapidly changing curricula and teaching methods of the schools.

The reorganization of the Society's scheme of examinations for the award of school certificates has been warmly welcomed by the local education and school authorities throughout the country. In 1959, the second year of the comprehensive scheme covering commercial, technical, and general school certificates, entries have been received from 6,738 candidates; for the Senior School Commercial Certificate examinations there were 95 entrants. The total number of subject-entries was 46,095 as against 26,240 in 1958. In addition, from Nigeria entries have been received from 886 candidates for the School Certificate (Commercial) and 52 for the Senior School Commercial Certificate; the total number of subject-entries was 5,778 as against 5,263 in 1958.

Of the special examinations conducted by the Society, it must be recorded that there has unfortunately been a slight drop in the numbers of entries for those in Road Transport subjects. But there has been an increased demand for the examinations organized on behalf of the British Transport Commission; this year the scheme was extended to allow for the inclusion of the apprenticeship scheme of British Waterways.

Four Silver Medallists at the Society's examinations in 1958 have been elected to Associate Membership.

The Worshipful Company of Clothworkers has again generously contributed towards the cost of the silver and bronze medals.

A fuller report on the Society's examinations during the past year will be published in the *Journal* in the autumn.

#### XI. INDUSTRIAL ART BURSARIES COMPETITION

There was an appreciable increase both in the number of candidates who entered the 1958 Competition and in the number of schools and industrial establishments represented therein (495 and 80 respectively, as compared with 423 and 70 in the 1957 Competition). A new record was also set in the value of the Bursaries awarded—£3,300, as compared with £3,050 in 1957. Of this £3,300, £3,078 was subscribed by industry and a further £200 was found from the funds of the Art Congress Studentship Trust of the Royal Society of Arts.

The Competition included for the first time a section for the design of watches and clocks. The other branches of industrial design represented were: *acrylic sheet ('Perspex')*; *carpets*; *domestic electric appliances*; *domestic solid-fuel-burning appliances*; *dress textiles*; *electric-light fittings*; *footwear*; *furnishing textiles*; *furniture*; *laminated plastics*; *packaging*; *stage and television settings*; *typography*;

*wall-paper; and women's fashion wear.* In addition, thanks to the generosity of George M. Whiley Ltd., a new award, known as the *George M. Whiley Bursary*, was made available, as either a sole or an additional award, to a successful candidate in any section of the Competition.

A total of twenty-five awards (including three made under the Bianca Mosca Memorial Trust) were made. Thirteen of the successful candidates were between 18 and 21 years of age and therefore eligible for Associate Membership of the Society, to which they have now been elected.

An illustrated report on the Competition was published, of which a summary was included in the March issue of the *Journal*. The annual exhibition of winning and commended designs was this year held for the first time in the new exhibition rooms on the first floor of the Society's extension premises, and was opened by Sir Harry Pilkington on 27th April, in the presence of an audience which included many of the successful candidates, their teachers, representatives of the supporting industries and the jurors responsible for judging the Competition. A special Press View preceded the official opening. (A report of the opening ceremony was published in the June issue of the *Journal*.) The exhibition will subsequently be shown in Belfast, Birmingham, Edinburgh, Falmouth, Newcastle-upon-Tyne and Stoke-on-Trent.

During 1958 twenty-seven of the Bursary winners in the 1957 and previous Competitions travelled either on the Continent or, with the help of additional money received from other sources as a result of their Bursary awards, to the United States, Canada, and Mexico. Details of these tours are given in the official report.

It is expected that some forty of the winning candidates in the 1958 and previous Competitions will be setting out later this year or in the spring of 1960. Arrangements are also being made for a number of them, together with some of the commended candidates, to gain practical experience by visiting factories and design studios in this country.

The Bursaries Board are constantly mindful of the need to encourage as many suitable young students of design as possible to enter, and remain in, industry, and they are therefore undertaking an investigation of the subsequent careers of students who have won Industrial Art Bursaries.

A further Competition is being organized during the present year in which it is hoped to offer Bursaries for all the sections included in the 1958 Competition, and, thanks to the generosity of Mr. E. E. Lawley, a section for the design of pottery will again be included. The Textiles and London Fashion Organization have most generously agreed to contribute the £350 necessary for the continuation of the Women's Fashion Section (the Deeds of Covenant under which the Bianca Mosca Awards have hitherto been made came to an end with the 1958 Competition; the awards in this section will now be presented in the name of TALFO). A new section sponsored by Pilkington Brothers will also be included.

The growth of the Competition naturally involves increased expenditure. The Society accepts complete responsibility for running the Competition and for all the administrative costs. It also provides some of the Bursary money, but far the greater

part of this is given by the industries concerned. The Council and the Bursaries Board take this opportunity to offer their renewed thanks to the many generous donors for their support.

## XII. THOMAS GRAY MEMORIAL TRUST

The funds available under the Thomas Gray Memorial Trust, the objects of which are 'the advancement of the science of navigation and the scientific and educational interests of the British Mercantile Marine', have been used to finance the following activities:

### *Scholarships for Deck-Boys and Young Seamen*

In 1958 the Trust made a further grant of £75 towards the provision of scholarships for deck-boys and young seamen, a scheme financed by the Trust but administered by the Seafarers' Education Service.

### *Prizes for Ships' Apprentices*

Fifteen prizes were awarded in connection with the examinations conducted by the Merchant Navy Training Board: five silver medals, five bronze medals and five nautical instruments.

### *Training Ship Prizes*

Prizes to a total value of £30, offered to the training ships *Arethusa*, *Indefatigable* and *Mercury* for the boy in each ship who, in the opinion of his officers, would make the best sailor, were awarded to Donald Herbert Cook and Peter John Guttridge of *Arethusa* (£5 each), Michael Balque Elesmore of *Indefatigable* (£10) and Donald Henry Williams of *Mercury* (£10).

### *Extra Master's Certificate Examination*

The silver medal offered to the candidate who obtained the highest marks in the Ministry of Transport's Examination for the Extra Master's Certificate in 1958 was awarded to David M. Bissett.

### *Thomas Gray Memorial Bursaries Scheme*

Bursaries were awarded under the Thomas Gray Memorial Bursaries Scheme to a boy on board H.M.S. *Conway* and to a cadet of the School of Navigation, Southampton. These bursaries are intended to help cadets whose training might otherwise be interrupted because of financial difficulties.

### *Deed of Professional Merit*

Three submissions were received in connection with the offer of the Society's silver medal for a deed of outstanding professional merit performed by a member of the British Mercantile Marine between October, 1957, and September, 1958, but the judges felt unable to recommend any of them for the award.

### XIII. ENDOWED PRIZES

The Swiney Prize for 1959, consisting of £100 in cash and a silver cup of like value, was awarded to Dr. Keith Simpson, Reader in Forensic Medicine to the University of London at Guy's Hospital Medical School, for his work, *Forensic Medicine* (third edition). The cup, designed by Mr. David Mellor, was illustrated and described in the *Journal* for March, 1959 (p. 230).

Offers of prizes were also made this year under the Howard and Fothergill Trusts. A Fothergill prize of £10 was awarded to Mr. E. C. Simpson, G.I.Fire E., for his essay advocating the use of 'Special Hydrant-Indicating Nails', but no entries were received for the Howard Prize. Mr. Simpson's essay, and full details of the Competition, were published in the November, 1958, *Journal* (p. 898).

### XIV. THE SOCIETY'S ENLARGED PREMISES

As predicted in the last Annual Report, the work of redecorating and of furnishing those parts of the enlarged premises reserved for the Society's own requirements was completed in the autumn of 1958, when the new Council Chamber, Committee Room and Fellows' Rooms came into use and the Secretary and the Accountants took possession of their new offices. The visit of inspection paid by H.R.H. the President on 6th November (see Section I of this Report) marked the successful conclusion of an undertaking which, by giving the Society greater living space and facilities for special functions, holds much promise for the future.

The appearance and furniture of the chief of the Society's new rooms were illustrated and described in the issue of the *Journal* for January, 1959. Since then the 1958 Industrial Art Bursaries Exhibition has inaugurated the use of the two Exhibition Rooms.

During the year under review, the Society, in granting a lease of several rooms on the ground floor of 18 Adam Street to the Institute for Strategic Studies, disposed of the remaining portion of its recent extension. Except for the apartments in use by the Society, all the office accommodation acquired in 1957 has now been let.

### XV. SPECIAL ACTIVITIES COMMITTEE

The Special Activities Committee during the year considered various matters in respect of which it seemed that action by the Society might produce useful results. On its initiative a conference on apprenticeship was held at the Society's House in July (see Section XVI of this Report), and the Committee subsequently discussed possible action on matters raised at this conference with a representative of the Industrial Training Committee, a body specially created by the British Employers Confederation and the Trades Union Congress.

At the instance of a Fellow, the Committee also addressed the Board of Trade on the difficult problem of protecting clothing designers against the pirating

of their designs, and there is reason to believe that the representations then made achieved some success.

Consideration was also given to such topics as the artificial construction of soils, the co-ordination of superannuation schemes to ensure transferability of pension rights, and the improved writing of technical handbooks.

#### XVI. CONFERENCE ON APPRENTICESHIP

On the 9th July the Society convened a one-day conference at its House to consider important problems discussed in the Report made by a Sub-Committee of the National Joint Advisory Council to the Minister of Labour, and entitled *Training For Skill*.

Lord Nathan, President of the Association of Technical Institutions and a member of the Society's Council, opened the conference and conducted its proceedings (which were fully reported in the *Journal* for October, 1958). Mr. Robert Carr, M.P., Chairman of the Committee which produced the Report, gave the opening address.

In the morning session, when the problems of craft apprenticeship in the smaller firms were discussed, Mr. E. L. G. Robbins, Mr. E. A. Green, Mr. A. E. Howard and Mr. A. C. Kelsall described respectively the operation of group apprenticeship schemes, joint training centres, block release schemes and pre-apprenticeship courses in technical schools and colleges. The need for closer co-operation between industry and education in apprenticeship was examined in the afternoon, when Mr. D. E. Woodbine Parish and Mr. C. L. Old opened the discussion.

The conference was well attended, and many representatives of industry, the technical colleges and schools, and of the Trade Unions, joined in the discussions.

#### XVII. COMMONWEALTH SECTION COMMITTEE

A list of the meetings arranged by the Commonwealth Section Committee will be found in Section XXVII of this report. The average attendance, which rose in the previous session, showed a further increase this year, and the meeting on 27th January, when Sir Vivian Fuchs delivered the Thomas Holland Memorial Lecture on 'The Commonwealth Transantarctic Expedition' to an audience of more than 200 Fellows and guests, was the most popular held in recent years. The Sir George Birdwood Memorial Lecture was delivered by Professor M. S. Sundaram, who surveyed 'A Century of British Education in India 1857-1957'. The Henry Morley Lecture, by Dr. W. Railston, was devoted to the part played by Britain in the Technical Development of Eastern Commonwealth Countries under the Colombo Plan. The paper read by Mr. S. H. U. Bowie on 23rd April made public for the first time a great deal of authoritative and valuable information on 'The Uranium and Thorium Resources of the Commonwealth'.

During the year the possibility of displaying an exhibition (or exhibitions) of industrial art from the Commonwealth in the Society's new rooms was kept

under review. Consideration was also given to a proposal that the Commonwealth Section should participate in an exhibition of Commonwealth Art to be arranged at Edinburgh as part of the 1960 Edinburgh Festival, and it was agreed to give such help to this project as might be appropriate.

At the invitation of the Future Policy Committee, the Commonwealth Section Committee also undertook an appraisal of its present field of work. A number of suggestions for enlarging the scope and activities of the section have been put forward for consideration.

#### XVIII. SCIENCE AND INDUSTRY COMMITTEE

The Science and Industry Committee, which is sponsored jointly by the Society, the British Association and the Nuffield Foundation, was appointed to investigate the factors which influence the rate of application of new scientific and technical ideas by British industry and to make proposals for increasing that rate of application. It has already produced two reports, *Industry and Technical Progress* and *Investment in Innovation*, and it has now approved for publication its third and final report, entitled *Science in Industry*. The first report discussed the factors governing the speed of the application of science to industry; the second considered the background to investment decisions. In its third report the Committee offers some practical suggestions for policy and action by industry and government.

With this report the Committee completes the task it was given and, unless fresh tasks are assigned to it, it will be disbanded at the end of this year.

#### XIX. THE LIBRARY

During the past year the Library has benefited from a number of gifts. Among the most noteworthy of these has been the presentation of an extensive collection of literature relating to the Brussels Universal and International Exhibition of 1958. This collection forms a useful addition to the section of the Library devoted to the major international exhibitions.

The rebinding of the Library's collection of books published before 1830 has continued, as has the cataloguing of the archives. Work has been begun on the arrangement of a collection of unsorted papers relating to various special committees of the Society which were active in the second half of the nineteenth century. Articles in the series *Studies in the Society's Archives* were published in the issues of the *Journal* for September and December, 1958, and for February, April and June, 1959.

#### XX. FILM EVENINGS

In accordance with what has become, in recent years, a custom, four Film Evenings were held during the Session. On each occasion the audience was large, and many Fellows introduced guests to this popular feature of the Society's programme.

The films shown included several of Canadian origin—*City of Gold*, *Romance of Transportation*, *Begone Dull Care* and *The Shepherd*; two of unusual geographic and anthropological interest—*Timeless Temiar* and *A Walk in the Forest*; two concerned with natural history—*Journey into Spring* and *The Bats*; and a study of the art of the *Renaissance*.

#### XXI. THE SOCIETY'S CHRISTMAS CARD

In its Christmas Card for 1958, the Society commemorated the first of its early awards for afforestation, made in 1758 to the fifth Duke of Beaufort, whom Miss Anna Zinkeisen depicted in the act of supervising the planting of acorns on his estate in Gloucestershire. This was one of the most successful subjects chosen in recent years, and over 24,000 copies of the card were sold.

#### XXII. FELLOWSHIP

The number of Fellows on the roll after the elections made at the Council meeting in June was 6,208, as compared with 6,076 at the corresponding time last year.

This is a satisfactory position, since although the increase is not large it marks the completion of the recovery from the recent loss in the total of members, which was the temporary result of the extension to all Fellows of the post-war increase of one guinea in the annual subscription. We may hope, therefore, that the Society is now entering upon a new period of further expansion. As is mentioned in Section IX of this report, the recently appointed Future Policy Committee has begun to advise the Council on lines of fresh activity which lie before the Society, and in doing so has become very conscious of the fact that every new development must inevitably make a call upon the membership of the Society for increased support, personal as well as financial. For Fellowship is not to be reckoned in numbers alone. The ability to pay an annual subscription or a life composition fee provides no automatic entrée to the Society; the Membership Committee examines every application with the utmost care in order to assess its value and to ensure the suitability of candidates for election.

#### XXIII. OBITUARY

This year the Society has recorded with deep regret the deaths of two serving Members of Council, Sir Stephen Tallents and Sir William Halcrow, and of three former Members of Council, Viscount Bledisloe, Sir Frank Brown and Mr. E. M. Rich. The year also saw the deaths of the eminent composer, Dr. Ralph Vaughan Williams, who was awarded the Albert Medal in 1955, and of Miss Violet Markham, who endowed the Paxton Memorial Trust to be administered by the Society.

Amongst other obituary notices published in the *Journal* were those of Dr. W. R. G. Atkins, the marine physiologist; Mr. J. H. O. Bunge, the Dutch-born engineer who became prominently associated with plans for a Thames barrage;

Sir Alfred Chatterton, a pioneer of industrial development in India; Mr. Lawrence Dale, the Oxford architect and diocesan surveyor; Mr. G. A. Denny the mining engineer; Sir Arthur Evans, for many years Conservative M.P. for Cardiff South; Professor R. C. Fitzgerald, the learned jurist; Sir Claude Gibb, the engineer, chairman of C. A. Parsons & Co. Ltd., and a leading figure in the post-war development of nuclear power in this country; Mr. A. J. Hazelgrove, the well-known Canadian architect; Mr. E. W. M. Heddle, for some years the Society's representative on the National Film Library; Hr. Axel Johnson, the Swedish industrialist; Sir Joseph Kay, long an influential and public-spirited member of the business community in Bombay; Mr. C. F. Kettering, the American inventor of the motor car ignition system; Mr. A. G. M. Michell, the Australian engineer and inventor; Sir Gordon Rolph, the Tasmanian newspaper proprietor; Sir William Rook, who did much to stimulate trade within the Commonwealth; Dr. Marie Stopes, the advocate of birth control; Mr. F. C. Sturrock, South African Minister of Transport throughout the recent war; and Sir Frederick Tidbury-Bear, a former Sheriff of the City of London.

#### XXIV. NEW COUNCIL

The deaths of Sir William Halcrow and Sir Stephen Tallents during the past year created two vacancies on the Council, which were filled by Mr. E. Maxwell Fry and Mr. William Johnstone. In addition to these changes, Mr. Paul Reilly was co-opted in place of Mr. Robin Darwin, who resigned. In accordance with the Bye-laws, four Ordinary Members of Council retire this year. They are: Dr. W. Greenhouse Allt, the Earl of Halsbury, Mr. A. C. Hartley and Sir Selwyn Selwyn-Clarke. The names of Mr. Geoffrey de Freitas, M.P., Dr. Stanley Gooding, Mr. Antony Hopkins and Mr. C. M. Vignoles have been put forward in their stead, together with that of Mr. Milner Gray, in place of Mr. Oswald P. Milne, who has been nominated a Vice-President of the Society.

#### XXV. STANDING COMMITTEES

The lists of those appointed to serve on the Standing Committees of the Society, and of the Society's representatives on the governing bodies and committees of certain other organizations, were published on pp. 65-9 of the *Journal* for December, 1958.

#### XXVI. FINANCE

In keeping with the improvement in general financial conditions the picture of the Society's finances in 1958 shows a marked return from the overall deficit which occurred in 1957 to a balanced income and expenditure account, with an excess of income over expenditure of an amount slightly over £4,000. This position arises not merely from an improvement in the Society's revenue from previously existing sources, but also from increased receipts from the sub-letting of parts of the adjoining building, for which in the preceding financial year the

Society paid the full rent but received very little in return. The whole building is now either in use by the Society or let to suitable sub-tenants.

This reversion to a more satisfactory financial condition is particularly timely in view of the present deliberations of the recently appointed Future Policy Committee, which is charged with the duty of making recommendations for appropriate future developments of the Society's work. No organization can live on past achievements and if, as is the hope of the Council, valuable new activities result from this committee's investigations, increased revenue is essential, for it is impossible to expand the Society's activities without increasing its liabilities.

### XXVII. LECTURES AND PAPERS

As in previous Sessions, the variety of subjects selected for the last programme of papers and lectures was as wide as the objects of the Society, viz., the encouragement of arts, manufactures and commerce. It is, however, from this unspecialized nature of its interests and work that in fact the Society derives so much of its strength and influence.

The Society was particularly pleased to have as the Trueman Wood Lecturer Mr. Walter Dorwin Teague, Hon.R.D.I., the well known American industrial designer, who came over from the United States to deliver this lecture, and also Sir Vivian Fuchs, the leader of the Commonwealth Transantarctic Expedition, who delivered the Thomas Holland Memorial Lecture on that subject before a very full and enthusiastic meeting of the Commonwealth Section.

#### ORDINARY MEETINGS

##### *Chairman's Inaugural Address*

THE CHALLENGE OF THE FUTURE. *Sir Alfred Bossom* (page 12)

##### *Trueman Wood Lecture*

THE GROWTH AND SCOPE OF INDUSTRIAL DESIGN IN THE UNITED STATES. *Walter Dorwin Teague* (page 640)

##### *Peter Le Neve Foster Lecture*

WOMEN AS WRITERS. *Sylvia Townsend Warner* (page 378)

##### *Alfred Bossom Lecture*

THE MECHANIZATION OF BUILDING CONSTRUCTIONAL PROCESSES. *Dr. D. G. R. Bonnell* (page 327)

##### *Cadman Memorial Lecture*

IMPROVING THE EFFICIENCY OF THE MINING INDUSTRY. *H. A. Longden* (page 33)

##### *Fred Cook Memorial Lecture*

ILLUSIONIST DECORATION IN CENTRAL ITALIAN PAINTING OF THE RENAISSANCE.

*Professor Sir Anthony Blunt* (page 309)

##### *Fernhurst Lecture*

THE BIOLOGICAL CONTROL OF AGRICULTURAL PESTS. *Professor G. C. Varley* (page 475)

AUGUST 1959

ANNUAL REPORT

*Ordinary Meetings*

MODERNIZING THE RAILWAYS: MOTIVE POWER AND OPERATION. *Cecil J. Allen* (page 19)

STYLE AND ERA IN CHURCH MELODY: AN HISTORICAL SURVEY. *The Revd. Canon Greville Cooke* (page 134)

THE CONSULTING ENGINEER AND HIS CONTRIBUTION TO THE NATIONAL ECONOMY. *Julian S. Tritton* (page 163)

LARGE SCALE ORGANIZATION AND CHANGE: A STUDY IN OIL MARKETING. *Christopher T. Brunner* (page 180)

FILMS IN ALLIANCE WITH INDUSTRY. *Edgar Anstey* (page 242)

TECHNICAL EDUCATION: AN ASSESSMENT. *The Rt. Honble. Lord Nathan* (page 255)

RHEOLOGY: THE SCIENCE OF PLASTIC FLOW. *Professor E. G. Richardson* (page 346)

DESIGNING, BUILDING AND SAILING YACHTS AND BOATS. *Uffa Fox* (25th February)

THE FUTURE OF NASH TERRACES (Symposium). *E. Maxwell Fry, J. E. M. MacGregor and Louis Osman* (page 387)

SOME ACHIEVEMENTS OF THE INTERNATIONAL GEOPHYSICAL YEAR. *Dr. D. G. Martin* (page 406)

A STUDY OF THE POLLUTION OF THE THAMES ESTUARY. *Dr. B. A. Southgate* (page 459)

PACKAGING PROGRESS. *Milner Gray* (page 621)

THE WORK OF THE HISTORIC CHURCHES PRESERVATION TRUST. *The Earl of Euston* (13th May)

TRADE AND THE BAMBOO CURTAIN. *The Rt. Honble. the Earl of Verulam* (20th May)

THE DEVELOPMENT OF THE PORT OF LONDON. *Sir Leslie Ford* (27th May)

THE CONTRIBUTION OF PSYCHIATRY TO MODERN MEDICINE. *Dr. David Stafford-Clark* (3rd June)

COMMONWEALTH SECTION

*Sir George Birdwood Memorial Lecture*

A CENTURY OF BRITISH EDUCATION IN INDIA 1857-1957. *Professor M. S. Sundaram* (page 491)

*Thomas Holland Memorial Lecture*

THE COMMONWEALTH TRANSANTARCTIC EXPEDITION. *Sir Vivian Fuchs* (27th January)

*Henry Morley Lecture*

BRITAIN AND THE TECHNICAL DEVELOPMENT OF EASTERN COMMONWEALTH COUNTRIES UNDER THE COLOMBO PLAN. *Dr. W. Railston* (page 652)

*Papers*

LAND UTILIZATION IN THE COMMONWEALTH. *Dr. L. Dudley Stamp* (page 199)

ROAD DEVELOPMENT IN THE OVERSEAS TERRITORIES. *Dr. R. S. Millard* (page 270)

THE HISTORY OF THE AFRICAN PYRETHRUM INDUSTRY. *Dr. T. F. West* (page 423)

THE ART OF THE AUSTRALIAN ABORIGINES AND ITS PLACE IN THEIR LIVES. *Charles Mountford* (5th March)

THE URANIUM AND THORIUM RESOURCES OF THE COMMONWEALTH *S. H. U. Bowie*  
(23rd April)

## CANTOR LECTURES

The following courses were delivered during last Session:

## THE AEROPLANE:

- I. THE BIRTH OF THE AEROPLANE. *C. H. Gibbs-Smith* (page 78)
- II. THE DEVELOPMENT OF THE AEROPLANE. *Peter W. Brooks* (page 97)
- III. THE FUTURE OF THE AEROPLANE. *Eric Mensforth* (page 117)

THE CLASSICAL COUNTRY HOUSE IN EIGHTEENTH-CENTURY ENGLAND. (*Three lectures.*) *Sir John Summerson* (page 539)

## RESEARCH IN TEXTILES:

- I. RESEARCH IN WOOL. *Professor J. B. Speakman* (20th April)
- II. RESEARCH IN COTTON. *Professor J. J. Vincent* (27th April)
- III. RESEARCH IN MAN-MADE FIBRES. *J. R. Whinfield* (4th May)

## DR. MANN JUVENILE LECTURES

The following two Juvenile Lectures were delivered during the Christmas holidays:

SUCCESS WITH A CAMERA. *Stanley J. Coleman* (31st December)  
FROM JUNGLE TO ZOO. *George Cansdale* (page 292)

## XXVIII. MEDALS FOR PAPERS

The Council have awarded Silver Medals for the Session 1958-9 to the following lecturers:

## For Papers read at Ordinary Meetings

Julian S. Tritton. 'The Consulting Engineer and his Contribution to the National Economy'

Christopher T. Brunner. 'Large Scale Organization and Change: a Study in Oil Marketing'

Dr. D. C. Martin. 'Some Achievements of the International Geophysical Year'

Walter Dorwin Teague. 'The Growth and Scope of Industrial Design in the United States'

Lord Verulam. 'Trade and the Bamboo Curtain'

Dr. D. Stafford-Clark. 'The Contribution of Psychiatry to Modern Medicine'

## For Papers read at Meetings of the Commonwealth Section

Dr. R. S. Millard. 'Road Development in the Overseas Territories'

Mr. S. H. U. Bowie. 'The Uranium and Thorium Resources of the Commonwealth'

THE CHAIRMAN: Are there any questions on the Annual Report?

MR. SIDNEY LOWETH: The obituary section does not include the name of Mr. W. T. Gilham, a Fellow who died on 20th May. Perhaps the Secretary was not notified?

THE CHAIRMAN: Thank you very much.

MR. LOWETH: There is one other point. I should like to suggest that when the List of Fellows is reprinted, it should be printed in a larger type (to make it more easily readable). But if that means added expense to the Society, then I suggest that the full list be printed less often and that supplementary lists be issued from time to time. I think everybody will agree that the type ordinarily used for the List of Fellows is very small and difficult to read.

THE CHAIRMAN: Thank you very much for that suggestion.

MR. D. J. AVERY: With regard to the rooms used by Fellows, I understand that the accommodation has now been moved from the two rooms on this floor to a room on the ground floor. I gather from the Notice in the *Journal* that this was due to the fact that several Fellows could not climb the stairs! I am wondering, since one room does not allow you to entertain people to coffee whilst someone else is making a telephone call, whether we could not still have one room on the first floor?

THE CHAIRMAN: There is one room immediately adjoining this Hall where lecturers and those on the platform can already do as you suggest. The other room is downstairs and this is available for Fellows to use whenever they wish.

MR. AVERY: We always had two rooms before.

THE CHAIRMAN: We had one before, you remember.

MR. AVERY: We always had a small room where we could make telephone calls.

THE CHAIRMAN: We have it now. I think you will find we have the same amount of accommodation as before, though it is, I think, rather better disposed now. ¶

MR. AVERY: Regarding the Benjamin Franklin Fellows, could you indicate a little more fully the method of selection, and say whether they are going to pay a subscription or not?

THE CHAIRMAN: There are five responsible people in America who have been appointed by the Council as the first Benjamin Franklin Fellows; they in turn will select other Benjamin Franklin Fellows who they consider will make a valuable addition to the membership of this Society. These Fellows will pay the same subscription as everyone else.

Now I should like to move the adoption of the Report. Having read many Reports in a quite considerable length of life, I think that the one before us is one of the most satisfactory I have seen. In every direction there is improvement, and that stands greatly to the credit of all those connected with the working of the Society.

You will remember that last year at the Annual General Meeting we were

literally on the threshold of our new quarters. They are now all occupied satisfactorily, and an appropriate income is being derived from all the parts that are let. I want especially to thank Sir Ernest Goodale and Professor Russell for their endless help in getting these new quarters in such a satisfactory condition. Those of us who have been associated with these gentlemen in this work sincerely admire what they have done and thank them for it.

The Society's membership has recovered from its earlier, temporary setback, and we can now look forward, I believe, to a continuing increase in Fellowship year by year. The Society to-day is economically and financially sound, which is not always the case with institutions of this nature in England now.

The Examinations Department is progressing remarkably well. The examinations in technical subjects which were instituted in 1957 are now satisfactorily established. There is also the demand for many of the older examinations, and these too continue to grow. As you will see in the Report, the increase in the number of entries in the past session is most striking: we have never had anything like it. This increase is not an accident: it is due, I think, to the continuous effort and efficiency of the staff of that department, and to the policy behind that effort. Last year I had the pleasure and the opportunity of thanking Sir Edward Crowe sincerely for the work that he had done as the Chairman of the Examinations Committee. This year I am proud to have the privilege of congratulating Dr. Holland on his exceedingly successful year.

A word about the Benjamin Franklin Fellowships: I was in America myself last year, and met the men who are looking after this new advance for the Society. I think you could hardly find people more responsible and more sincere in their desire to help on the work of our Society. We hope that in the reasonable future a similar development may be introduced in several of the larger parts of the Commonwealth.

We have established a Future Policy Committee which is examining all of the activities of the Society, and new activities are being suggested. I feel confident that we can look forward now to wider fields of greater usefulness.

I commend to this meeting the adoption of this Report.

*The motion that the Annual Report be adopted, having been formally seconded by Mr. Oswald P. Milne, was put to the meeting and carried unanimously.*

*The Chairman then called on Mr. F. A. Mercer, the Senior Treasurer, to move the adoption of the Accounts for the year ending 31st December, 1958.*

MR. F. A. MERCER: I am in the very happy position of finding that everything which needs to be said in presenting these Accounts has already been said. We have already heard that we ended the year with an excess of income over expenditure of £4,197. We have also heard that all of our new premises are now occupied and that we can look forward to covering the rents we have to pay from the rents receivable from our tenants or chargeable against the examinations.

We have also been told in the Report that our special committee is examining ways and means by which the Society can enlarge its usefulness and that every

increased activity will demand increased expenditure; so that if we wish to expand we must increase our revenue correspondingly.

I now have pleasure in proposing that the Accounts for the year 1958 be adopted and approved.

*Mr. Sidney Loweth having formally seconded their adoption, the motion that the Accounts be adopted was put to the meeting and carried unanimously.*

THE CHAIRMAN: It is again my privilege to thank the Treasurers for the very fine work which they have done. Their task has not been an easy one this past year. We have moved into new quarters, with many attendant expenses, and there has been much work involved in disposing of the leased portions of the new premises. Everything has now been satisfactorily accomplished. For this, and for all their help, the Society, as well as the Council, owes a great debt of gratitude to our two Treasurers.

*Mr. E. E. Lawley having formally seconded the vote of thanks to the Treasurers, it was carried with acclamation.*

THE CHAIRMAN: Now we have a number of amendments to the Bye-laws intended (a) to meet the situation created by the change from a fortnightly to a monthly *Journal*, (b) to bring the procedure regarding the posting of names of candidates for admission as members into line with current practice, and (c) to bring the procedure in Council regarding the consideration of the Albert Medal into line with current practice, to take account of the change to a monthly *Journal*, and to make it clear that the President's approval is required for the award.

*The Chairman then outlined the amendments as follows:\**

(a) Bye-laws 24, 25, 30, 31 and 39: to meet the situation created by the change from a fortnightly to a monthly *Journal*:

*Bye-law 24.* In the second line insert after the words 'given in' the words 'the June issue of'.

*Bye-law 25.* Delete the words 'during the week preceding' on the fifth and sixth lines and replace by the words 'at least seven days previously to the holding of'.

*Bye-law 30.* Delete the word 'twenty-eight' in the fifth line and replace by the word 'forty-two'.

*Bye-law 31.* After the words 'published in' in the fifth line, insert the words 'or distributed with'.

*Bye-law 39.* Delete the words 'be published in the next issue of the Society's *Journal*' in the last line and replace by the words 'if time permits, in the *Journal* of the Society, and in any case be advertised in *The Times* and one other daily London Morning Newspaper'.

(b) *Bye-law 47:* to bring the procedure regarding the posting of names of candidates for admission as members into line with current practice.

(i) delete the words 'The paper thus signed or such nomination of' in the twelfth line and replace by the words 'The list of those thus proposed or nominated by';

\* In order to save space, the actual amendments alone are given here. Copies of the full text of the amended Bye-laws may be obtained on application to the Secretary.

(ii) delete the words 'name of the candidate is' in the fourteenth line and replace by the words 'names of the candidates are';

(iii) delete the words 'name of the candidate is' in the sixteenth line and replace by the words 'names of the candidates are';

(iv) delete the word 'the' at the end of the seventeenth line and replace by the word 'a';

(c) *Bye-laws 72 and 74*: to bring the procedure in Council regarding the consideration of the Albert Medal into line with current practice, to take account of the change to a monthly *Journal*, and to make it clear that the President's approval is required for the award.

*Bye-law 72*: Delete the existing Bye-law and replace by: 'A notice shall be given in the February and March issues of the *Journal* that at the first Council Meeting in May the Council will make a recommendation regarding the award of the Albert Medal for the consideration of the President. The first notice shall describe the object of the Medal, give names of persons who have received it already, and ask Members of the Society to send in the names of such persons as they may think suitable for the consideration of the Council'.

*Bye-law 74*. Delete.

*The motion that the existing Bye-laws be amended in the manner described above, having been seconded by Mr. Peter Le Neve Foster, was put to the meeting and carried unanimously.*

THE CHAIRMAN: At this point it will not be out of place if I interrupt our business to tell you that within about a quarter of an hour of this very moment (11 a.m. Canadian time, 4 p.m. G.M.T.) the Albert Medal is to be handed to the Governor-General of Canada, Mr. Vincent Massey, by our President at a ceremony in Government House, Ottawa; and shortly afterwards Mr. Diefenbaker is going to receive his Diploma of Fellowship of the Society, also from our President.

The next item of business is a proposal for the adoption of a new Bye-law.

You have in front of you the text of a suggested Bye-law allowing for the admission of Companies in association, and this Bye-law was also printed in the *Journal* for July. I think this is a movement forward that everybody will approve, and I believe as the years pass we shall reap material benefit from it. Now I should like to move the adoption of this additional Bye-law, to become No. 68.

*The motion that the additional Bye-law for the admission of Companies in association with the Society be adopted, having been formally seconded by Mr. Peter Le Neve Foster, was put to the meeting and carried unanimously.*

THE CHAIRMAN: It will be noticed that as a result of the amendments and the additional Bye-law which we have approved and adopted, some re-numbering is required: the existing Bye-laws 68-74 become Nos. 69-74 in the new sequence.

*The Chairman then called upon the Secretary to announce the New Council for*

AUGUST 1959

ANNUAL GENERAL MEETING

1959-60, the list of which is as follows (names in italics are of Fellows who did not serve on the previous Council in the capacity indicated):

PRESIDENT

His Royal Highness The Prince Philip, Duke of Edinburgh, K.G., K.T.

VICE-PRESIDENTS

*Oswald P. Milne, F.R.I.B.A., J.P. (Chairman designate)*

Sir Alfred Bossom, Bt., LL.D., F.R.I.B.A., J.P., M.P.

Sir Edward Crowe, K.C.M.G.

Sir Ernest Goodale, C.B.E., M.C.

R. W. Holland, O.B.E., M.A., M.Sc., LL.D.

Sir Harry Lindsay, K.C.I.E., C.B.E.

The Right Honble. the Earl of Radnor, K.C.V.O.

E. Munro Runtz, F.R.I.C.S.

Sir George Edwards, C.B.E. (President's nominee)

*Professor R. Y. Goodden, C.B.E., R.D.I., A.R.I.B.A., F.S.I.A.*

(Master of the Faculty of Royal Designers for Industry)

Colonel W. J. Brown, V.D., LL.D., J.P. (Honorary Corresponding Member for Canada)

ORDINARY MEMBERS

Mrs. Mary Adams, O.B.E., M.Sc.

Sir Hilary Blood, G.B.E., K.C.M.G., M.A., LL.D.

The Honble. G. C. H. Chubb

R. E. Dangerfield

*Geoffrey de Freitas, M.P.*

P. A. Le Neve Foster

E. Maxwell Fry, C.B.E., B.Arch., F.R.I.B.A.

John Gloag, Hon.A.R.I.B.A., Hon.F.S.I.A.

*Stanley E. F. Gooding, M.A., M.Sc., M.D.*

*Milner Gray, R.D.I., P.P.S.I.A.*

*Antony Hopkins*

William Johnstone, O.B.E., D.A.

The Right Honble. Lord Latham, J.P., F.C.I.S., F.L.A.A.

Edgar E. Lawley

The Right Honble. Lord Nathan, T.D., F.S.A., P.C., D.L., J.P.

Paul Reilly

Sir Gilbert Rennie, G.B.E., K.C.M.G., M.C.

A. R. N. Roberts

Sir Philip Southwell, C.B.E., M.C.

Professor S. Tolansky, Ph.D., D.Sc., F.R.S.

*C. M. Vignoles, C.B.E., M.A.*

H. A. Warren, M.Sc., M.I.C.E.

Sir Griffith Williams, K.B.E., C.B.

Miss Anna Zinkeisen, R.O.I., R.D.I.

TREASURERS

F. A. Mercer, Hon.F.S.I.A.

G. E. Tonge

THE CHAIRMAN: I now want to do something that I am sure everybody in this room will endorse, and that is to propose a vote of thanks to the whole staff of the Society. I belong to a great many societies, to many clubs, and probably twenty committees in the House of Commons, and yet I know none of them that has a more loyal or a more active and responsible staff than we have in the Royal Society of Arts. They are quite unique in the way they support every effort that is made; and not only do they support it, but they make constructive contributions wherever possible. In particular, I want to thank Dr. Luckhurst very much for his kindness, his help and his endless co-operation. During the

two years that I have had the honour of being Chairman of this Society I could not have had more help than he has given me. On no occasion have I ever wanted for anything that he could get for me, and I thank him most sincerely for what he has done. Equally, I wish to thank Mr. Mercer—in fact, I should like to name each member of the staff with whom I have had any contact, but such a procedure would unfortunately take up too much time; but my thanks are none the less sincere on that account.

*The vote of thanks was carried with acclamation, and was acknowledged briefly by the Secretary.*

DR. R. W. HOLLAND: It is a great privilege to propose a vote of thanks to our Chairman. I had the opportunity of sitting in the Chair of this Society for two years, and at the end of that time I saw the beginning of the negotiations for the extension of our premises. Sir Alfred, although he has told us to-day of those who have helped and brought to fruition the occupation of those rooms, did not tell you that he, as Chairman, saw the business through: it was his responsibility, and a good job he made of it. You have heard him this afternoon; you have seen him on other occasions; and my recommendation is really not necessary. But, Ladies and Gentlemen, you can hardly conceive of the busy life that Sir Alfred Bossom leads and the way that it is organized! Nothing goes by default; nothing is forgotten. And his manner of dealing with people explains why the staff are so loyal. Ladies and Gentlemen, will you show your appreciation of Sir Alfred's work as Chairman of Council of this Society in the usual way.

SIR ERNEST GOODALE: I have great pleasure in seconding Dr. Holland's motion, and in endorsing all that he has said about our Chairman. Dr. Holland has given some little indication of the other activities of Sir Alfred Bossom. May I give a little more? We do not enjoy all his time, although one would almost think we did. But he leads, of course, a really active and conscientious life as a Member of Parliament. Only this week *The Times* showed him performing his duties as a Knight of the Order of St. John of Jerusalem. Then the other day, as Chairman of the Anglo-Iranian Section of the Inter-Parliamentary Union, he was almost in attendance upon the Shah of Persia; and so it goes on. We are, therefore, very fortunate indeed to have been able to claim so very much of his time during the last two years and we do most sincerely thank you, Sir, for devoting so much of your time to the interests of the Society, which has greatly benefited under your tutelage.

*The vote of thanks to the Chairman was carried with acclamation.*

THE CHAIRMAN: Dr. Holland, Sir Ernest Goodale, I greatly appreciate what you have said. In my judgment this Society is one of the most important Societies of its kind in the world, and I think that anyone who occupies the position of its Chairman of Council has a great responsibility. It is a responsibility which I have been honoured to humbly try to satisfactorily discharge.

*There being no other business, the meeting then ended.*

# PACKAGING PROGRESS

*A paper by*

*MILNER GRAY, R.D.I., P.P.S.I.A.,*

*read to the Society on Wednesday, 22nd April, 1959,*

*with John Gloag, Hon.A.R.I.B.A., Hon.F.S.I.A.,*

*a Member of Council of the Society, in the Chair*

**THE CHAIRMAN:** The subject of the paper which is to be given this afternoon by Mr. Milner Gray is Packaging Progress. Packaging has always been with us, in one form or another. It is apt to be taken for granted.

Familiarity breeds inattention, and the most familiar form of package is a uniform: it is something that has figured in the world since the armour of the Roman legionary was standardized over 2,000 years ago, even earlier. It has recognition value: it conveys to us what in advertising is called a *brand image*, so that it is impossible for us to think of a policeman, a naval rating, a soldier or an airman without visualizing their characteristic packaging, so to speak. And as packaging for armed men changes with the needs and character of warfare, so has packaging for commodities changed during the last fifty years to meet the new needs of commerce and, particularly since the end of the last war, to meet the far more exacting standards of contemporary traders and greatly improved taste of contemporary consumers.

Up to the 1920s we were suffering from a hang-over from a period of universal bad taste, when the florid and brutal vulgarities of the Victorian period still lingered on, when commercial art, particularly that large and influential section of it concerned with the packaging of goods, was only just beginning to be affected by the adventurous experiments of some gifted young designers.

It was in this period of promise and artistic enterprise and enlightened commercial patronage that young men like Milner Gray began to work. His work, and that of his contemporaries, has changed the whole character and function of packaging, and indeed of commercial and industrial design; for those activities now command not only the skill of printers and all the improved processes they have perfected, but draw on materials like paper; and the designer finds himself in a team with marketing and motivation research specialists, and all those people who are concerned with the advertising business. But the designer remains the innovating, independent mind: he supplies the essential ingredient of trained imagination, lacking which the life and gaiety and powers of persuasion depart from packing.

Mr. Milner Gray is a master designer. He is a Past Master of the Faculty of Royal Designers for Industry; a Past President of the Society of Industrial Artists; a member of the Alliance Graphique Internationale; a member of the Royal Mint Advisory Committee; and of the Ministry of Education's National Advisory Council on Art Education.

He is one of the two senior partners in Design Research Unit, an organization that has an international reputation. Mr. Milner Gray began practice in 1921 and devoted some part of his time to teaching, and has held lectureships at London University, Goldsmiths College, Chelsea and Reimann Schools of Art, and the Royal College of Art. From 1937 to 1940 he was the Principal of the Sir John Cass School of Art. During the 1914-18 war he served in the Royal Engineers in Camouflage, and during the 1939-45 war was head of the Ministry of Information Exhibitions Branch, and one of their chief advisers on design.

Incidentally, he designed the Royal Coat of Arms for use at the Coronation of Her Majesty The Queen, and also the glass screen for the Royal Box at the Royal Festival Hall. His reputation as an industrial designer extends far beyond Britain, and he has been commissioned by European concerns as well as by many of the leading and progressive firms of our country. He has been a Vice-President of this Society, a member of the Board of Governors of the London Central School of Art, and adviser to the B.B.C. on schools broadcasts.

I could say a lot more about his qualifications, but let this brief summary suffice.

*The following paper, which was illustrated with lantern slides, was then read:*

### THE PAPER

We are sometimes told that history repeats itself; but as often as not it does so with differences occasioned by the changing pattern of life from one period of time to another. As I rise in answer to Mr. John Gloag's encouraging introductory remarks, for a brief moment I feel myself the subject of some strange experiment in time—a flashback to 8th March, 1939, when from this same rostrum, and again under the same wise Chairmanship, I essayed to condense within the space of some forty minutes a potted descriptive history of packaging from the beginnings of recorded time to its most recent developments then, just before the outbreak of the Second World War. But even as I search for the notes for that meeting, my eye falls on this rostrum, and I see that it is not the same, for the rostrum itself has been re-packaged through the generosity of our President, H.R.H. The Duke of Edinburgh, who gave it to the Society in its new form, and by the skill of the Master of the Faculty of R.D.I., Professor Russell, who designed it; and I know by this token that I am back in 1959, and am given the opportunity to assess the changing pattern and trace the origins of change.

Speaking at that other meeting, Mr. Gloag described packaging as having been for centuries before an almost anonymous art, which had currently seen a great renaissance during the 1930s. Despite this, it was still a subject to which, in those seemingly far off days, comparatively little serious attention had been given by all but a handful of British manufacturers. But the flowering of this revival was not yet to be, and for several years the British public was more concerned with getting their ration of commodities, then in short supply, than with the method or manner of their wrapping. The war years closed in on the beginnings of the age of packaging.

### WAR-TIME INTERLUDE

But if the incidence of war broke in upon the renaissance of package design in England, the war itself cannot be written off as a total loss by this ubiquitous industry. The war, in fact, taught us many lessons in technical packaging, when it was found that shipment after shipment of service equipment and essential war-like stores were unserviceable after having been transported in some cases many thousands of miles. An interchange of technical information took place between the U.S.A., ourselves and other allied countries; and British manufacturers were called upon by the Supply and Service departments to

co-operate with the British Standards Institute in the preparation of a code of packaging specifications. There followed a long chapter of achievement covering the contribution of scientific research into the proofing of packings against the risks of corrosion, mould, mildew, vermin, weevils and termites, and into the testing of containers to ensure that they would stand up to the physical conditions they would encounter in transit. From these researches were developed techniques such as the 'strip-coat' packing of precision tools and small parts, and the packing of whole aero engines or electrical equipment in air-exhausted polythene film envelopes containing a desiccant to absorb the moisture in any included air and prevent corrosion.

#### TECHNICAL ADVANCES

Since the end of the war, increasing attention has been focused on the subject of packaging. As restrictions in materials and labour were relaxed, lessons learned the hard way during hostilities were studied and applied; research into the physical properties and performance of both old and new packaging materials and structures instituted during the war was continued and developed in the service of peace-time industry. In addition to the research undertaken by industry itself and the suppliers of packaging materials, much valuable work has been carried out by the Government-backed Printing and Allied Trades Research Association. This organization has extensive laboratory facilities for assessing the performance of a pack by means of simulated transport tests. As a result of these tests, the design of a pack can often be improved in order to give maximum protection at the minimum cost. This application of research to the protective package is one of the main distinctions between to-day's approach to the problems and the largely trial and error methods of the days before the war. Another is the increasing availability of synthetic barrier materials, the chemical and physical make-up of which can be adjusted to cater for a range of different environmental hazards. And yet another is the more scientific attention given in our day and age to assessing and analysing the preferences or prejudices of the eventual consumer of the packaged product.

So many are the raw materials employed in package manufacture; so varied are the structural forms in which these materials are applied; so wide are the industrial fields in which the process plays a part, and so numerous the industrial products it is required to protect, that the process of packaging is apt to present a variety of quite dissimilar aspects to different observers, according to the point-of-view from which each one looks at it.

To the firm exporting heavy machinery, it may mean a crate, a plastics 'cocoon', a protective coating of wax; to the manufacturer of pharmaceuticals, a production line producing strips of tablets sealed individually in transparent film or film/metal laminate; to the maker of shaving cream, an automatic installation for filling collapsible metal tubes at 100 a minute and packing them in individual cartons and display containers; to the poultry breeder a P.V.C. shrinkable film, impermeable to gas, air or moisture, which will preserve birds killed in June for sale at Christmas; to the wine and spirit merchant, not only the bottles



*Dehydrated soups packed in attractive envelopes in reverse-printed acetate film laminated to aluminium foil, which is in turn laminated to diothene-coated paper. Designed by F. H. K. Henrion, the pack clearly illustrates the soups*

themselves, but stoppers, foil capsules, labels, adhesives, cartons and an elaborate plant designed to wash, fill, close, crate and palletize them.

Evidence of a growing recognition of the importance of the subject is not wanting. The packaging industry to-day supports five major exhibitions held regularly in Western Europe, and is an important secondary theme in many more. The years since the war have seen the establishment here in Great Britain of the Institute of Packaging, whose objects include the raising of standards of efficiency in the craft, and the testing by examination of the qualifications of prospective members. Last year saw the opening in London of a permanent Packaging Centre, sponsored by the industry, probably the only one of its kind in the world. This autumn will see another packaging exhibition, to be held at the Council of Industrial Design's Design Centre in London, organized in collaboration with the Society of Industrial Artists.

A technical journal\* for business and industrial executives recently quoted that fifty-nine public companies forming the core of this huge trade declared profits in 1957 amounting to £53,842,000 and paid out £6,431,000 to shareholders. It has been estimated that at least 12 per cent of the cost of all manufactured goods in Britain is spent on packaging. The industry uses nearly half the paper made or sold in this country. How much industry in the United Kingdom pays annually for packaging as a whole can only be guessed at but, quoting from the same journal, it is almost certainly 'safe to say that it is not less to-day than the figure of £400 million accepted by some authorities some three years ago'.

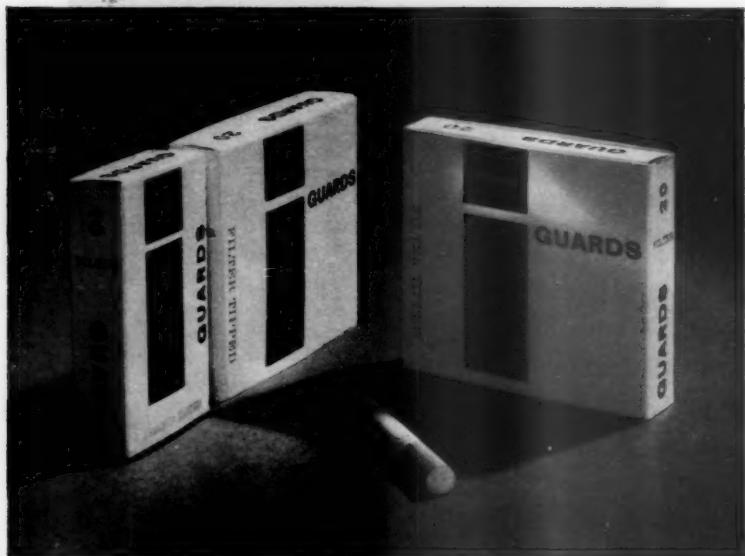
\*Scope, July 1958



*Examples from a range of wine labels designed by the author as part of a corporate identity programme for W. & A. Gilbey Ltd., Wine and Spirit Merchants. The programme aims at establishing a marked family character, without undue standardization, so that the many varieties of wines and spirits marketed by the Company each possess a personality of their own, yet retain a family likeness*

#### VISUAL APPEAL

But, however large the financial investment and return, whatever quantities of raw material are employed, however ingenious or elaborate is the machinery used by this extensive industry for fabricating these materials, it stands or falls on the success of its end product. However important to the package may be its technical and structural qualities to ensure safe transit or preserved condition of its contents—and this protective function is primary and elemental—the practice of package design cannot be confined to these aspects alone, and it is primarily upon some other essential qualities that I want to dwell. To the ultimate consumer of packaged goods—to the average Mr. and Mrs. Shopper—the message conveyed by the actual shape and surface treatment of the pack is



*Carton for 'Guards' cigarettes designed by Alan Ball of Design Research Unit: the careful balancing of the components of the design achieve a maximum visual impact*

likely to be the only conscious influence in the purchase of it, if indeed the influence is conscious at all. Clothes may not make the man nor the package claim sole credit for selling the commodity, but all the same, most of us tend very largely to judge by appearance. As things are to-day, with many brands of the same commodity competing for sale in shops and stores throughout the world, merchandise is forced not only to give value, but to be seen to give value. The only visible manifestation in the shops of an increasing proportion of consumer goods is that of their protective covering. More and more the apparent value of an article is the value implicit in its packing, and the same care and attention that is given to the making or selection of the one require to be given to the shaping and surface treatment of the other.

The appearance of the package is, therefore, as important, and sometimes more important than the appearance of the product itself. But to be fully effective as a sales-aid, the look and feel of the covering—its size, shape, colour and identifying qualities—must be keyed to an accurate assessment of the potential market for the product it contains.

To determine this, the manufacturer of packed merchandise must study, either through his own sales and public relations channels or through external

market research agencies, the likes and dislikes of his potential customers. If, for example, his product is destined for the kitchen, standard refrigerator or cabinet sizes—and also the size of feminine hands—may have a bearing on its dimensions. It must be designed to be easy to open and plainly shown to be so, and, if required, equally easy to re-seal; it may need to be fitted with some form of pourer, sprinkler or aid to dispensing the contents, or it may have to accommodate recipes, directions for use or cautionary instructions.

As every manufacturer who packs his products will know, he must also consider how his containers will be made, filled, transported, stocked, stacked, displayed, sold and eventually used, so as to produce the most economic packing for the product at its every stage from production line to ash can. He must assess the shelf appeal of directly competitive lines and of other merchandise aimed at the same audience, to ensure that in comparative display the appearance of his product will hold its own. For instance, in spite of the acknowledged visual attraction of red, there would need to be a good case for the adoption of red as a basic colour for a new pack in a field already over-crowded with red containers.

He must measure both the income and social level of that section of the population which will be in the market for his goods, so as to imply by the appearance of his packing that his merchandise is designed for their purse and their taste. Aiming at the highest common sales multiple, he will ask what are the practical and aesthetic qualities which will persuade the widest acceptance by the largest number over the longest period. While it is the reasonable hope of every package user that his pack will never need to be changed, if he is alive to current trends he will be aware of an ever-changing cycle of taste for which he must cater. Such changes, when accepted as desirable or inevitable, may be made in one bold radical move or by barely perceptible variations over a period of years towards a pre-stated goal. Many well-known package users have accepted this principle of continuous development by stages to meet changing consumer concepts and demands.

#### SOCIOLOGICAL CHANGES

The changing social structure in these post-war years, assisted, among other influences, by the advent of television advertising, is creating a new and more demanding—although not necessarily a more critical—attitude in the purchasing impulses of the average consumer. This attitude, particularly among those of the younger generation, is fostered by the acceptance, scarcely conscious, but none the less real, of the principle of expendability which, born during the war and since stimulated by higher wages, apparent plenty and intense publicity, finds expression in a more casual and experimental way of life than that of their parents.

Although this development of the social pattern has reached only an early stage in Great Britain, its progress can be seen in the United States, where the power of television advertising and of the supermarket is already established as part of the shape of normal daily life.

At home, largely influenced by the success of such developments in the U.S.A., manufacturers and distributors have seized upon these new ways of

selling, which of their nature materially affect and very largely dictate the brief for the form and treatment of the contemporary pack. In many classes of goods, the package must now be designed to fulfil functions additional to those of protection of the product, its display in windows and on shelves, and its reproduction in the Press and on the hoardings. It must be designed to meet the new and exacting requirements both of commodity advertising through the medium of commercial television and of selling through customer self-service channels where impulse buying plays a prominent part.

In their efforts to encourage the impulse buyer in the supermarket, and to discover what will influence the customer's behaviour and choice, manufacturers in the U.S.A. have enlisted the aid of psychiatry and the social sciences. Conventional methods of assessing consumer preferences are giving way to motivation research, described by Louis Cheskin, the head of a Chicago research firm, as 'the type of research that seeks to learn what motivates people in making choices. It employs techniques designed to reach the unconscious or subconscious mind because preferences generally are determined by factors of which the individual is not conscious. . . . Actually in the buying situation the consumer generally acts emotionally and compulsively, unconsciously reacting to the images and designs which in the subconscious are associated with the product.' This is perhaps no more than has been done before by many a shrewd advertiser with less elaborate aids.

The American writer, Vance Pickard, in his book *The Hidden Persuaders*\* draws back the curtain, however, on the incredible world peopled by a new breed of men—the psychologist-turned-merchandiser and the publicist-turned-psychoanalyst combining to operate 'word-associations' and 'symbol-manipulations', all geared to that old unconscious which they know so much better than its owner—with higher sales as the end in view.

Mr. Pickard quotes tests carried out by a motivational analyst, James Vicary, into the reaction of women shoppers in supermarkets. How fast a person blinks his eyes is a pretty good index of his state of inner tension. The average person, according to Mr. Vicary, blinks his eyes about thirty-two times a minute. If he is tense he blinks more frequently; under extreme tension, up to fifty or sixty times a minute. If he is notably relaxed, on the other hand, his blink rate may drop to a subnormal twenty or less. Mr. Vicary set up cameras to record the blink-rate of customers passing through a self-service store. The results were startling even to him. Instead of going up to register mounting tension, they went down and down, to a very subnormal fourteen blinks a minute. The ladies fell into what Mr. Vicary calls a hypnoidal trance, passing neighbours and old friends without noticing them, but filling their baskets as they went. Only the sound of the cash register bell brought them back to normal—indeed, to an abnormally high rate of forty-five blinks per minute. In some cases, they had not the money to pay for all the nice things they had put in their baskets.

The American Color Research Institute, which specializes in designing 'deep-impact' packages, won't even send a package out into the field for testing

\*Longmans, Green & Co.



*An interesting pack for Foster's Military Gin: the illustration is carried round three sides of the carton, so that when three cartons are shown together they build up a pattern in the dealer's window. Designer, Ronald Ingles of Design Research Unit*

until it has passed eye-movement tests to show how well the consumer's eye will pick it out on the shelf. One American package designer, Frank Gianninoto, has developed an interesting theory. He has concluded that a majority of women shoppers leave their glasses at home, or will never wear glasses in public if they can avoid it, so that a package to be successful must stand out from the 'blurred confusion'.

Be all this as it may, the competition between pack and pack for prominence in supermarkets unsupported by the persuasion of the sales assistant requires the use on all forms of packing of markedly legible product identification on otherwise unencumbered main display panels. This, however, does not necessarily imply the use of outsize lettering: the skilful employment of colours and a careful balance of the components of the design should be made to achieve the maximum visual impact. In the case of new or comparatively little known commodities the incorporation of full colour illustrations may be regarded as frequently desirable. Space must be allowed on the pack for the addition of price markings or of house marking as a guard against pilfering.

The normal methods of stacking on shelves and gondolas and the speed with which such self-service sales units have to be refilled militate against the accurate

orientation of cylindrical containers, and the rectangular box or carton therefore has distinct display advantages over its round counterpart. To achieve maximum display space on the shelf and to try to dominate the section of the self-service store, some manufacturers are producing packs which are exaggeratedly tall and broad, but not deep enough for stability when in use in the home. The movement towards greater standardization of self-service fittings, and to some extent of those in all types of retail store, may tend to establish certain dimensional limitations upon the proportions of containers of all types.

The effectiveness and economy of fluorescent illumination is resulting in its increasing adoption by retail stores, but this form of lighting has two distinct disadvantages in relation to the presentation of packaged goods; for one thing colours, otherwise bright in daylight, may become drab under these lights, and for another the glossy surface of film or foil-wrapped packs will often produce areas of high reflection which obscure the name or the selling message.

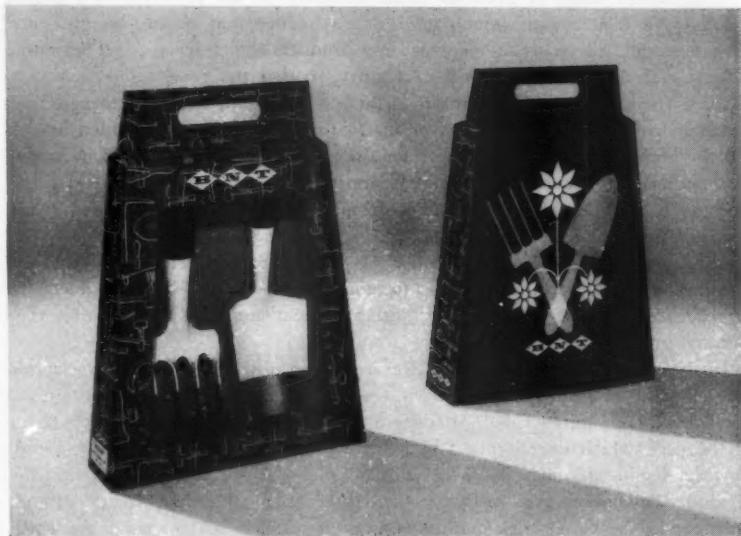
Some of the physical characteristics of the pack designed to meet the needs of these recent developments in retail store methods apply equally to its treatment for showing to the public through the medium of commercial television. Highly-glazed and film-covered surfaces react badly to studio lighting, and colours do not reproduce in their correct values on the television screen. This means that in addition to the testing of inks under the varying lighting conditions normally in use in retail stores, tests must be included in the research programme for colour reaction under the super-normal studio lighting conditions as seen through the medium of the cathode tube.

Thus with the advent of commercial television the manufacturer is faced with yet another packaging decision. While he may decide upon the use of a foil wrapping as implying a high quality product when seen in the store, the use of such wrappings may react against the effectiveness of the pack when advertised through the medium of television. It is true that he may, and often does, overcome this by the preparation of a special pack to play the part in the studio. In common with the need for quick and easy identification of the pack in the supermarket, the television advertiser will do well to adopt the simplest format and avoid the use of complicated patterns in the surface treatment of his pack, because of the very brief period of its showing on the black and white screen.

It is not every manufacturer, however, who uses the television screen, nor have supermarkets yet ousted other methods of retail selling from these islands. In other types of store, large or small, cartoned goods, especially the smaller units, such as pharmaceutical, toilet and confectionery lines, are contained in and supported by larger cartons. The display outer, almost discarded in the self-service store, still plays an effective rôle in other settings.

#### THE BRAND IMAGE

With so much emphasis on the artifice by which the customer is enticed to choose one package in preference to another, it might appear that the quality of the goods inside is of no account. This, of course, is nonsense, for however much the manufacturer hopes to influence an initial purchase of his goods on



*An attractive carry-pack for fork and trowel designed for Brades Nash Tyzack by W. M. de Majo, as part of a packaging style aimed to appeal to the lady gardener*

impulse, his principal interest is to persuade the customer to buy his goods again and again, and satisfaction in the use of the article is still the main motive for successive purchases.

So it is that forward-looking manufacturers who market a range of related consumer goods, all appealing to the same category of market, will aim to build up a well-defined house style for the packing of their products and implant in the minds of their customers an easily recognizable, and in the end familiar, 'brand' image.

A range of packs conforming to a generic house style in this way is generally referred to as a 'family': the term is apt because it implies the same sort of likenesses so generally apparent between close relatives in the average human family: likenesses which are based upon strongly marked physical characteristics.

A recent exhibition at The Tea Centre entitled 'The Face of the Firm', which was organized by the Design and Industries Association, focused attention on the increasing recognition by industry of this process of the building up of a corporate identity or brand image as an essential requisite in a firm's marketing armoury. As corporations become larger, and contact between maker and ultimate user loses the intimacy of earlier trading conditions, the belief grows in the need for trading companies to develop characters of their own.

The family range of packings is an extension of the principle of branding goods which reflects the manufacturer's confidence that having bought once, the customer will want to recognize his products and buy again. The aim is to establish a range of products as a unity, so that the good will attaching to leading items in a range is transferred to less important items, or to new lines as these are introduced. The art of successful presentation of branded lines is by the building up of a personality for the product and the house of its origin. Its method is to establish some one or more common characteristics extending through every phase. It may be a letter form, a trade mark, a basic colour scheme, a peculiarity in shape or a common pattern of typography or form of illustration. More often, it will be a combination of all or some of these elements. Whatever the means employed, the object is to associate a certain definite character or atmosphere with the manufacturer's establishment and products, so that they become immediately recognizable.

In the actual process of the visual examination of a package and its selection by the customer from the dealer's window or the self-service gondola, the name itself may play a minor rôle in identifying the product. It is the whole character of the pack which is recognized long before the name of the product is read, however legible this may be. The habitual smoker of 'Player's' or 'Gold Flake' cigarettes subconsciously recognizes and accepts the familiar packet without deciphering the name. The motorist who prefers 'Shell' seldom reads the word. If you favour either 'Gordons' or 'Booths' gin, you will identify your favourite tipple by the shape of the bottle and the format of the label, long before you read the brand name, whether or not you can differentiate the contents blindfolded.

The personality of a pack is of far greater worth to the manufacturer than any mere optical, eye-test legibility of his brand name. A good pack is a valuable property and worth all the care and cost expended upon it from the start: it may be renovated and improved from time to time, but the more carefully it has been studied from the start, the longer will be its life.

It would be a logical corollary to assume that, with a public as conservative as the British, it would be a grave mistake to tamper with the face of a pack once this had become an established image: and it is true that this is something which should never be lightly done. But public taste does not remain static, and the up and coming generations will, in their turn, call for some evidence of progress. To the young, an outmoded shape or an old-fashioned style of pack may suggest inefficiency, or at best inadequacy, in the product. To the older person, an advanced design may fail to inspire the same confidence as did the old familiar face. The manufacturer who packs his wares must see to it that the image he creates is acceptable to all sections of his market.

But the brand image from which the family pack stems is something more than merely a link in the public mind between product and product. It implies a company's faith in the whole organization of their business—an extension of the self-respect, once thought to be the exclusive prerogative of the craftsman in the value of his service to the public. It helps to breed reliance and respect amongst a firm's suppliers and business associates; it encourages among the



*An easily recognized brand image: carton and band designed by Ronald Armstrong of Design Research Unit, as part of a scheme for the packaging of Ever-Ready Natural Angle Razors*

company's staff a feeling that they are working for a progressive organization confident in their wares and their selling methods; it engenders in management itself a pride of purpose and a sense of achievement.

The product itself must always be the prime concern of any manufacturer; but I have found in the course of my practice as a designer that it is just those manufacturers most actively interested in perfecting the design or quality of their products who also pay the most attention to the way in which these goods are dressed and presented to the public.

The spontaneous recognition of a product or a family of products will come only after constant repetition of the various elements which go to the make-up of a corporate identity. Not only must the consumer see and identify the packaged articles in the dealer's window and on his shelves, but the familiar face of the firm should show itself in the company's showrooms and offices, on their transport vehicles on the road, in advertisements in the Press, in posters on the hoardings, on the television screen, on stationery and on sales promotion literature; so that everything associated with the firm which may have a visual impact on the public is identified with the source of its origin. In the long run, if these things are well designed, any mention of the name of the company or its branded products

will automatically conjure up in the consumer's mind a clear picture of an attractive product personality.

## FROM RETROSPECT TO PROSPECT

I have tried this afternoon to describe something of the progress made in the field of packaging over the last two decades, and to trace some of the outstanding developments since 1939: alas, with many words, I fear, I have but nibbled at the merest fringe of a field which seems as vast as ever, and which indeed continually grows and extends as might some dream Alicean field.

The process of packing goods and merchandise for its protection in man's service is no new phenomenon. To a greater or lesser extent it has existed and developed since man first made pots for holding water or for storing grain. Its place, however, in the complicated civilization of to-day and its apparent worth in the conservation and distribution of goods of all kinds has increased over the years, until we now see it as a major motivating power in influencing the buying habits of the consumer.

Whether the brave new world of Mr. Aldous Huxley's 'John the Savage' or that far grimmer world of Mr. George Orwell's 'Big Brother' appears most likely to engulf us, it seems highly probable that the labyrinthine world of Mr. Vance Pickard's depth persuaders is already on its way from America, neatly packaged with instructions on 'how to use'.

Perhaps for a few glimpses into the future we may look more hopefully, however, to the pundits in our midst. Writing in January in the *Financial Times*, Mr. Philip Andrew, Director of the Packaging Centre, tells us of anticipated developments in the dipping of foodstuffs in emulsions which will deposit an edible protective skin, a process already in use with a non-edible material. Preservation by irradiation is another process which he suggests may involve dramatic packaging changes. The expendable pack, he says, is being widely contemplated and closely calculated in many new fields, despite higher direct package costs, in order to overcome the difficulties inseparable from the use of returnable packages. Earlier this month the *Evening Standard* produced a cartoon by 'Acanthus' showing two bowler-hatted gentlemen in a soft-drink bar, with the caption 'Saves litter, too, you drink the fizz, then you eat the bottle'.

Mr. John Ryan's *Scope* magazine describes the impressive increase in the speed of packaging machinery; of developments in the use of electronics; and of the spread of automation in the field of packaging. Cartons can now be filled and closed at the rate of 360 a minute; sweets are wrapped at 500 a minute; two collapsible tubes may be filled in about a second; and glass bottles can be filled and capped at 400 a minute.

Mr. Clothier, the Editor of *Packaging and Packing Record*, writing last month in *The Times* Supplement on 'Britain's Food', forecasts a move towards the greater use of plastic materials for packing many consumer products, which sometimes in conjunction with aluminium foil provide an efficient and attractive packaging medium, even for long-term storage of foodstuffs. We may expect to see, he says, the packaging of more foodstuffs in individual portions. He quotes the 'cook-in-pack' for poultry, and the aluminium foil 'heat-and-serve' packs for fish fillets

and meat pies. He refers also to the increase in the pre-packing of fresh produce, fruit, meat and ready-prepared vegetables.

But still, says Mr. Clothier again, customers complain; for instance, 'Why don't they package sugar better?', usually adding that the product is wasted by clinging to the interior of the package. The fact is that the present method of packaging sugar is about the most economical that can be devised. The machinery used is a marvel of ingenuity: it takes the plain wrapping materials, prints them, combines them, forms an open-topped package from them, fills the package accurately, seals it neatly and efficiently, and discharges a completely finished pack ready for shipping. All this is done at high speed, without wastage of wrapping material and with the guarantee to the consumer of accurate weight. The present sugar package is in fact a type-specimen of efficiency and economy.

The manufacturer who fails to-day to take advantage of all that modern developments in the technique of packaging can provide, may well expect to suffer the fate foreshadowed by G. K. Chesterton for the 'Wicked Grocer', who

. . . Groces  
In spirits and in wine,  
Not frankly and in fellowship  
As men in inns do dine;  
But packed with soap and sardines  
And carried off by grooms,  
For to be snatched by Duchesses  
And drunk in dressing-rooms. . . .  
But now the sands are running out  
From sugar of a sort,  
The Grocer trembles; for his time,  
Just like his weight, is short.\*

#### DISCUSSION

THE CHAIRMAN: We have enjoyed a most instructive and stimulating assessment of the progress that packaging has made. If I may begin the poem which Mr. Milner Gray ended:

God made the wicked grocer  
For a mystery and a sign,  
That men might shun the awful shops  
And go to inns to dine.\*

I will not go on with it, though I could recite the whole poem. To-day it is virtually impossible for people to shun the shops. Packaging has advanced enormously, but despite all the techniques that are coming across the Atlantic to persuade people to do things which they, in their heart of hearts, think are fundamentally unsound, one thing shines out from everything Mr. Gray has said and everything he has shown us: that despite all these high-sounding techniques, with their scientific names, borrowed from psychology, the king of the whole lot is imagination; and the imagination resides in the mind and in the genius of the designer.

MR. P. K. SHAHANI: The lecturer said that the first Packaging Centre was set up in London last year, but I read in a magazine more or less at the same time that a conference was held in Prague in January, 1958, which resulted in the establishment of the first Packaging Centre in the world. That was only one of the achievements of that conference; the other achievement was the establishment of two Fellowships

\* 'The Song Against Grocers', from *Wine, Water and Song*, published by Methuen & Co. Ltd. This extract is reproduced by permission of Miss D. E. Collins.

in packaging technology at Prague University. Does the lecturer consider it worth while to have similar Fellowships in this country?

THE LECTURER: A very interesting question. I am sorry that I did not include a reference to the Prague Convention in 1958, and to the establishment there of a packaging centre. This is I believe, in common with the Dutch Packaging Centre, a research establishment on similar lines to our own PATRA. In this country we generally apply the term Centre in this context to a permanent exhibition and receptacle of technical information such as the Building Centre and the Design Centre. I am open to correction, but in this sense I think our own Packaging Centre is the first of *its kind* in the world. On the subject of the establishment of educational courses and Fellowships in Packaging, there may be some in the audience who can speak more knowledgeably on what is being done than I. I know that the Institute of Packaging has initiated courses, but I am not familiar with the details of these. The question of whether there should be a university Fellowship in such specialized techniques as packaging psychology, is a very broad one which raises the whole issue of what we think is the purpose of universities. I think there should be courses, and there are courses, but whether they should be university courses or not, I would not care to say.

MR. G. EVAN COOK: In further reference to Mr. Milner Gray's reply to this question regarding the Institute of Packaging and the educational side—the various areas of the Institute do run educational classes. I was invited to Glasgow, where I was asked to give a talk on heavy packing, and there was a class between forty and fifty on that occasion.

MR. JOHN S. JAMIESON: I have a package here, which I bought from a shop this morning. Within ten minutes the paper was torn, and in half an hour I had an extremely sore finger through carrying it by the string, as I was supposed to do. In this day and age could not one have better material than string, such as plastic for example, which does not cut the finger? Also I should like to mention the carrier cases with the handles which you showed on the screen. Wouldn't one want to have a brown piece of paper round them rather than exhibit the carrier and its contents?

THE LECTURER: What one can do in regard to carrier bags of all sorts depends very much on what allowance for such packing is available. Of course, the aim and the interest of a manufacturer or a retailer in producing a carrier bag is to see that his product is boldly advertised as it is carried through the streets; but it raises a problem which is particularly interesting to the package designer. The problem of establishing a reasonable balance between the manufacturer's interest to advertise and the average consumer's preference for anonymity in his purchases can be solved with a little ingenious thought. So much depends on the particular product and the particular consumer. There are some people who do not at all mind carrying a bag with a brand name on it, provided it is the right brand name. It always surprises me that there are some women who will blatantly flaunt scarves with the maker's name incorporated boldly as part of the design.

MR. ALAN WELLINGS, A.R.C.A.: Mr. Milner Gray spoke about the spontaneous recognition of the pack. Well, I think the design of certain brands of cigarette packets is bad, but they are very successful packages from that point of view. Does it not seem that any pack with familiarity will produce that spontaneously recognized quality?

THE LECTURER: It is certainly true that there are packages on the market to-day which hold their own because of their long-established familiarity. Some are aesthetically fine, others are not. Some the manufacturer would willingly change, but dare not risk the loss of goodwill inherent in the old design. Some, like the

Player's cigarette carton, have been changed imperceptibly over the years to bring them somewhat more into line with current trends, whilst retaining the basic brand image. To change or not to change a well-established design is a decision which can only be taken on the merits of each individual case. But to establish familiarity merely by longevity is really a rather negative approach to the subject.

MR. W. M. DE MAJO, M.B.E., F.S.I.A.: I wonder if Mr. Gray would agree that this is rather like the maxim 'it does not matter what kind of publicity you get, as long as you get it'. In this case, while the bad design probably carries some value—the question is, does it give as good value as would the same pack redesigned or better designed, which would then create a much stronger impression?

THE LECTURER: Yes, I certainly agree with the views underlying Mr. Majo's question, although I doubt whether it would be wise to advise Player's to completely change the design of their pack. But I may be wrong; there are certainly many packs which are merely old and not all that familiar, for which a good face-lift, keyed to current market preferences, would boost their sales. In the cigarette world it is a not uncommon practice to continue the old successful lines with minor modifications, but from time to time to introduce new lines designed to appeal to the up-and-coming market of a younger generation.

MR. E. J. WIDDICOMBE: We have heard a lot about the advantages of modern packaging but there is the other side of the story. More wrappings, especially on foodstuffs, are leading to more litter. Here is an industry gaining ground at the expense of another industry's assets. The tourist industry in Britain is now possibly approaching a peak from which it could easily decline in the future if visitors from overseas were not satisfied with our standard of tidiness. The amount of litter taken by our own people into our own beautiful countryside at holiday times is becoming a national disgrace. While various branches of the packaging industry are doing enormous and lucrative business it is to be hoped that they will soon generally realize that they have a moral responsibility to the community. This they could acknowledge in practice, by supplementing the Government's anti-litter campaign with the industry's own relevant advertising campaign, a campaign which would bring its own reward in public good will. To a very limited extent, such supplementary advertising has been practised by a few firms, but I commend this point for further consideration by designers and manufacturers, particularly in the food and tobacco distribution trades: it would surely be easy to put on a cigarette packet, 'Please throw me in a bin when done with'. Proper education could eliminate this trouble, but fifteen years of the new Education Act seem to have failed to do so. May I have Mr. Milner Gray's opinion on this?

THE CHAIRMAN: Before Mr. Milner Gray answers, may I say that anybody who throws litter about is now liable to a fine of £5!

THE LECTURER: I entirely agree with the questioner, but I do not really think that it is packaging, or the packaging industry that is to blame. Unnecessary packing is being considered very seriously. It is bound to be considered seriously because it is an economical consideration. No, it's just simply that we seem to be litter-minded compared with many other countries. There is every bit as much packaging in Switzerland, for instance, but you do not see rubbish thrown about in railway trains as you do in this country, except perhaps where the English tourist was sitting. I have been told that British Railways find it cheaper to clean up the mess than provide the litter accommodation as other countries do. Be this as it may, it is a fact that many manufacturers of packaged articles are very litter conscious and many are including on their packages a reference to the disposal of the discarded pack. The only complete answer was in the cartoon I put on the screen. If we can so

organize things that we can eat the package when we have finished the contents, then everything will be lovely.

MR. B. FIELD: Could you tell me if there is a difference between packaging and packing, and if so, was not the first slide that was shown rather a packing technique than a demonstration of some progress in packaging?

THE LECTURER: I fancy that there is in fact no etymological standard in this matter, but it is a good point, and it is certainly true that at one time we used to emphasize the difference between the technique of packing and the art of packaging, which we claimed included those aspects of the pack designed to appeal to the consumer. But this can be more than a visual appeal, and we have come to realize that the art of packaging must embrace all that the technique of packing can provide to increase the total appeal.

MR. G. CRANMER-BROWN: You mention in your talk that quite obviously there is an ever-changing market, and that manufacturers therefore have to give continual development to new lines and new products. Compared with the United States, in this country we have so many manufacturers, all requiring different packs and packing requirements. Do you think there is going to be any move towards standardization? In America they have plants which produce one particular pack; for example, there is a plant for the Coca-Cola industry which produces a six-bottle carrier pack, with contracts for five million runs at a time. They have one plant which does nothing else but this one pack, and the whole thing is electronically controlled, and it is virtually run by very few people. Do you think we are going to get some sort of standardization rather than increase the range of different types of packaging and packing material?

THE LECTURER: It seems almost certain that we shall move more and more towards certain areas of standardization, because it is economical to the package material supplier and the package manufacturer. In some fields, in bottle-manufacture, for instance, standardization is already fairly advanced. It is very much more difficult and more expensive to get a special bottle made than it is to buy the familiar stock bottle; although, of course, by dressing up the bottle in different ways, the product can be given an individual character. Conditions in this country, however, are less conducive to standardization than conditions in the United States. The quantities required in the States enable them to standardize very large runs for special purposes. Standardization of that order is less likely here because our consumer requirements are not on the same vast scale.

MRS. SHIRLEY M. FOWLER (Advertising Art Agency Ltd.): There is a belief amongst clients that, although they themselves like the best artistic design, the consumer will not. Would Mr. Gray, in initiating a new design, deliberately step down the quality of its appearance in order to meet the so-called 'consumers' taste'?

THE LECTURER: I think there is often a tendency on the part of manufacturers to underrate the standard of taste of the public they wish to serve. But, of course, a pack must be designed to meet the particular market that the manufacturer wants to reach. A large part of the packaging problem is to assess accurately the taste of the potential consumer of the packaged product. But whatever the assessment, the design of the pack must be good of its kind.

THE CHAIRMAN: It becomes my very pleasant task to propose a vote of thanks to the lecturer. We have had, as I said before, a most instructive survey of the progress that has been made in packaging. We have also had an extremely interesting discussion. There is one small point that I should like to raise over the matter of litter. Apart

from the fact that it is now an expensive thing to throw away litter, Mr. Milner Gray's delightful reproduction of that cartoon of eating the bottle as well as consuming what was in it, has a very real and practical application. I happen to live on the edge of Richmond Park. Richmond Park and Bushey Park and Windsor Great Park are three of the big open spaces that have hardly any litter in them, for the very excellent reason that during and after the weekend litter is eaten by the deer. I have noticed it for years. There was recently a most unfortunate case of a deer in Richmond Park suffering from arsenical poisoning. I do not know what kind of pack it ate!

In the course of my remarks at the beginning of this discussion I may have suggested a slightly derogatory attitude towards these remarkable psychological techniques that are invading our everyday life—but they do remind me of the resistance which always becomes articulate amongst people with an outrageous sense of humour when anything new is introduced. Mechanized greyhound racing first became popular after the First World War, when the electric hare was introduced. Somebody, obviously speaking under the influence of G. K. Chesterton or Hilaire Belloc, said that the next improvement would be to have electric hounds as well as an electric hare, and then the spectators would be dummies and the damn thing would go on for ever! I think you would all join with me in saying what an extraordinarily good time Mr. Milner Gray has given us, and what a superb selection of illustrations he has collected. They show that public taste to-day is at a higher level than it has been since the disastrous Victorian era.

*The vote of thanks to the Lecturer was carried with acclamation, and the meeting then ended.*

# THE GROWTH AND SCOPE OF INDUSTRIAL DESIGN IN THE UNITED STATES

*The Trueman Wood Lecture by  
WALTER DORWIN TEAGUE, Hon.R.D.I.,  
delivered to the Society on Wednesday, 6th May, with  
Sir Alfred Bossom, Bt., LL.D., F.R.I.B.A., J.P., M.P.,  
in the Chair*

THE CHAIRMAN: We are going to have a rather unusual experience this afternoon. Mr. Teague is going to tell us his own experiences in the development of what might be called the practice of industrial and commercial art in the United States. He was one of the driving forces behind it, and its growth and scope in the United States owe much to him. Those who had the privilege of being in that country in those early years know how it was evolved and that a few men with drive made it possible. They created something that has undoubtedly given America a great boost. I will not say that it is the first time that it has been done; other countries have attempted it, sometimes with great success; but undoubtedly the work done by Mr. Teague and a number of his associates and followers has made a great contribution to the prosperity of the United States.

*The following lecture, which was illustrated with lantern slides, was then delivered:*

## THE LECTURE

Men have always made things. This tendency to tinker has insured our survival, but it has not made us unique among the creatures of the earth. Others have become very clever artisans indeed. Spiders, for instance, make traps to catch their prey which have us goggle-eyed not only at their ingenuity but at their sheer beauty; when it comes to the processing and storage of certain raw materials, bees have secret skills we have never learned; the dwellings built by hornets, orioles, ants and dozens of other busy little homemakers are quite as efficient 'machines for living', from the owner's point of view, as some turned out by modern architects.

Our distinction is not that we have developed skills but that we have never rested on any ledge or even on any plateau of achievement: we have done not one but many things, and while we have done some of them exceedingly well nothing has ever seemed quite good enough. We do appear to have had a monopoly of dissatisfaction. And we have been driven by an inner urge to do better.

Whenever a man takes up a new set of tools, it is not expected that he should produce masterpieces immediately. But he is always under a compulsion to advance through practice, experiment, trial and error, towards an acceptable degree of competence. This period of apprenticeship may be spread over years.

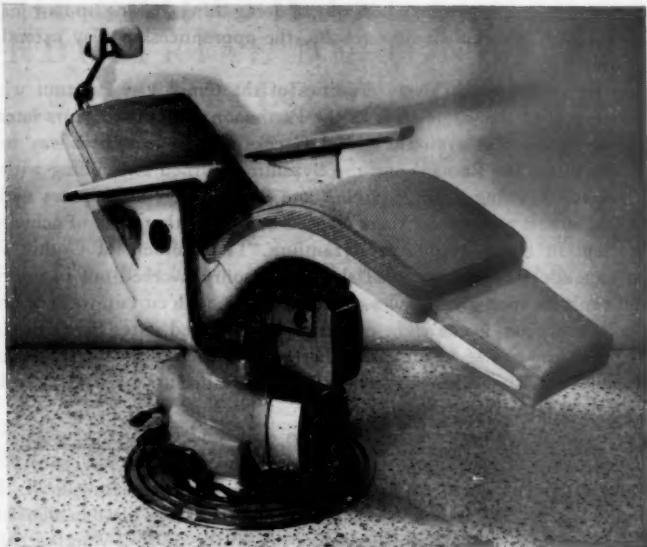
When an entire people turn to a new way of doing things, taking up new materials and methods to accomplish new results, the apprenticeship may extend itself to centuries.

When we compare the lovely crudities of the temples at Paestum with the serene triumph of this same style in the Parthenon, a hundred years later, it is comforting to see that even the gifted Greeks had to feel their way towards perfection. When the Romans and the Byzantines turned to building with brick and concrete, throwing up huge arches and roofing incredible spaces with thin flat domes, almost a thousand years elapsed before another peak of achievement was reached in Santa Sophia of Byzantium. The builders of Gothic France aspired to a special architecture of skeletal masonry, worked out in interlacing ribs and vaults to span great spaces at great heights, with curtain walls of brilliant multi-coloured glass. Some eight centuries were needed, after Santa Sophia, to arrive at the successes of Amiens and Chartres. But each of these long-drawn-out efforts at last realized a new type of very nearly absolute beauty, to be added to the store of beauty inherited from the past.

No age or culture has ever made such a swift and complete change-over to new tools, materials, techniques and purposes as we peoples of Western Europe and America have undertaken in what we call the Industrial Revolution. It has been more drastic than all the technological change that took place in all of human history preceding it. We abandoned practically all the ways of working that had satisfied people throughout their past and adopted an unfamiliar system of mechanized techniques of utmost intricacy. We have not had thousands of years to master the staggering complexities of our new system—we have not had even two centuries, as yet. So it is not surprising if we are still struggling with its elementary problems, trying to get the hang of these fabulous tools, trying to learn how they should and should not be used. So far as we can tell, we have not yet done anything that can be classed with the Parthenon or the Hagia Sophia or Chartres. Perhaps we never shall: our divinities to-day seem less inspiring than those to whom Athens and Byzantium and Gothic France raised their temples.

And yet—who knows? I suspect that we aim to-day to serve not any cloudy deities from outer space, but to serve mankind itself: its dignity, its honour, its freedom, its well-being, the realization of all those human potentials which certainly have not yet disclosed their limitations. It is a dream that grows. It should, and may, achieve results of a sublimity we cannot yet foresee.

Meanwhile we are under the same compulsion to achieve mastery, to solve our problems rightly, that all other ages have felt. Perhaps the urge is stronger now, because it is more self-conscious and more rational. We have found that to day we cannot afford to wait for the slow and costly denouement of trial and error: we must substitute analysis, the application of reason to cut through swiftly to objectives that have been clearly defined in advance. Thus the tempo of our movement is vastly accelerated, our resources accumulate with awesome speed, our perceptions grow keener and our command of our destiny more complete than men have been used to exercising in the past.



*Ritter dental chair, designed and engineered by Walter Dorwin Teague Associates. The chair, which reclines as a unit, and is low enough to allow the dentist to work while seated, is made of reinforced fibreglass. It is operated by foot pedals*

In the course of the Industrial Revolution the free industrialized nations of the west have entrusted the satisfaction of their needs to a complex alliance of science, technology and business, in which science opens up continually expanding possibilities of human service; technology translates these possibilities into viable realities, to be produced in whatever quantities humanity requires; business provides both science and technology with the means they need to do their work, rewards their efforts and distributes their product to those who can use it. This statement is an over-simplification of a very elaborate system, but essentially it is true. I speak with authority only of the industrial complex as it exists in my own country, but there my knowledge is intimate and my experience most varied over more than six decades of close involvement in industrial growth and change. The science-technology-business complex in the United States has certain characteristics which we consider virtues, which I think often are not understood abroad, and which we feel are responsible for its dynamic vigour. In the first place, it is a system of which the motivating spirit is competition, regulated as strictly as possible to prevent unfair practices, and providing in our opinion maximum incentives to advancement and improvement. We believe this combination of innumerable forces is more effective than overall planning or direction by finite individual minds can ever be. In the second

place there has been an astonishingly wide diffusion of ownership, so that many large corporations have many more shareholders than employees, with a large percentage of the owners being also in the working force. A third characteristic is the emergence of a trained managerial profession which has displaced the old type of owner-manager and which recognizes that business prosperity depends on the widest possible diffusion of prosperity among the population, so that every worker can be a possible customer, directly or indirectly, for the product he is making.

I am fully aware of the imperfections of our system, which after all, reflect only the imperfections of human beings themselves. We will not have a perfect system unless we have perfect men to run it—and how utterly dull that would be! But the system to-day is, as a whole, far superior to the individuals responsible for it because so many of these give absolutely their *best* to it—not merely their run-of-the-mill, average effort, but the best of which they are capable. And the system has been so successful in supplying the material needs of our country that it has won for us a world-wide reputation as the world's most materialistic people.

This is a kind of *post hoc, propter hoc* indictment which I cannot accept without at least mildly protesting its inclusiveness. Because I have seen within my own lifetime how much more than material well-being has accrued to my country from free interplay of creative energies, untrammelled explorations into the scientific unknown, prompt putting to work of useful knowledge, wide distribution of benefits wherever arrived at. The first nineteen years of my life were spent in a simple agrarian society which was just beginning to feel the dislocations of the Industrial Revolution but none of its benefits. Believe me, that life was not good! Since then, I have seen countless primeval barriers falling, life lengthened and health improved, back-breaking drudgery banished from the field of labour, even mere unimaginative machine-tending retreating before automation, immense new fields of creative activity opening up even more rapidly than men can be found to explore them. And in the past third of a century I have seen rational order and man-made beauty returning to the artificial world we are building, reviving as naturally and spontaneously as flowers and foliage return in the spring.

In some ways the last phenomenon is the most precious, for a man-made world without beauty to match nature's own is unthinkable, and would be unendurable, no matter how beneficent it might be in all material ways. We can be happy only if a thing uplifts our spirits as it serves our practical needs. In this respect we have not yet arrived at the serene competence that alone will satisfy us. But because of the analytical techniques we have developed we have come in a mere third of a century to understand the conditions of competence, and the particular kind of beauty it will achieve, as no people has ever understood its destiny before. This conscious grasp of our objectives is one phase of a swift evolution which has had many phases.

The decade of the 1920s was a period of very active ferment in American industry, perhaps our local version of a world-wide ferment. It saw the establishment



*Standard desk type telephone set, designed by Henry Dreyfuss for Bell Telephone Laboratories. Overall area and height have been kept to a minimum, and the design insures both efficiency of hand action and readability*

at Dessau of the Bauhaus, which had a rapidly spreading influence on European architecture and applied design, although this influence was not felt in America until many years after we had worked out our own ways of solving the same problems. In America the early years of this decade were shaken by Henry Ford's declaration that no individual in his employ should earn less than five dollars a day, no matter what his job might be. Henry Ford had perfected the assembly-line system of manufacture, had built one of the nation's largest businesses, had put the populace on wheels in his Model T Ford car, of which millions were crowding the highways. But less far-sighted executives screamed that at last the man had lost his mind—he could not double the wage scale at one stroke!

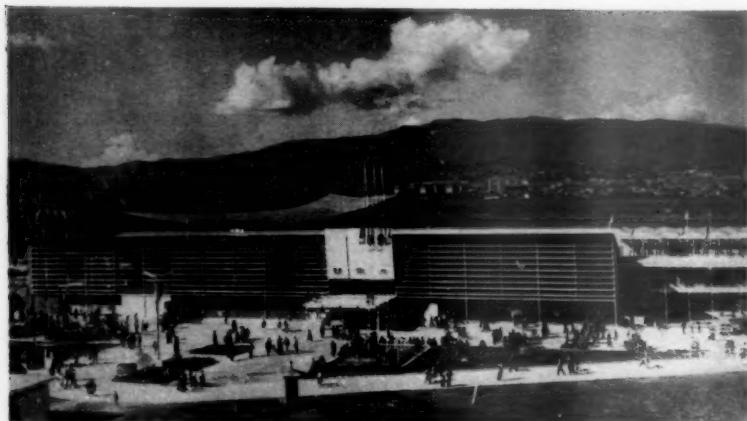
But Henry had never been wiser. His mind worked simply. He realized that if a man made five dollars a day he could afford to buy a Ford car at the prices then prevailing, if he made less he could not. So Henry decided that his market must include the wage earners of America, and not be limited to the middle and upper income levels. Within two years Henry Ford's wage was the prevailing rate in American industry, and this rate has gone on rising ever since, until to-day the average income of workers in Ford factories is just under \$6,000



*U.S. Pavilion, Poznan International Trade Fair, 1958. Designer, Reino Aarnio*

a year. They can all afford Ford or General Motors cars, or a foreign sports car if they prefer.

There were many other alert minds in American industry in the 1920s, and they too were taking fresh looks at the situation around them. Having gone a long way toward solving the problems of mass production, having gotten costs under control and established effective distribution systems, they began casting a critical eye on the products they were making. Conscious of the competition they faced constantly, they began to wonder whether their products themselves possessed all the appeal they might have. They were the best their engineering staffs could do, but there was such a thing as 'art' in the world—could an infusion of art make their products more satisfactory to their customers? A surprising number of manufacturers, realizing that they did not have the necessary talent within their own organizations, began looking around for it. They did not know exactly where to look. They wanted 'artists' to design their products, and so they turned to whatever kind of 'artist' they found classed under the heading of 'designer'. They turned to scenic designers, to interior designers, to designers of advertising and the graphic arts. Some of these designers proved to be successful in industry: many more flubbed their opportunity and were not called on again. Those who had a real feeling for line and form, for proportion and fitness and colour, and also had the practical ability to realize these desirable attributes under the peculiar conditions which prevailed in industry, were successful and continued in this new and expanding field.



*The Exhibit Building designed for the United States Government at the Zagreb Trade Fair, 1957. The building was supported on a single row of 'Y'-shaped columns, and the louvers, back and front, could be opened and closed at will*

I hope I may be pardoned a bit of autobiography, because I think my own experience was typical of many others. By the middle of the 1920s I was established as a designer in the graphic arts, with enough leading advertisers seeking my services to fill all my time, and enough work on periodicals and books to sweeten the mixture a little. But something in the air of the time was making me dissatisfied and bored with the work I was doing. Then a few people asked me to do some packages; a piano manufacturer asked me to design two or three grand pianos; a leading automobile manufacturer asked me to sketch a new line of cars with their colour schemes. These projects were novel, and I found them stimulating. But none of them worked out very satisfactorily except the grand pianos, which I had built under my own direction. That taught me a lesson.

Then in 1927 Henry Ford exploded a second bombshell in the American business world: he blandly announced that he would discontinue the manufacture of the famous Model T; it had had its day and he would close down his plants for eighteen months while a new, modern car was designed and tooled for production.

What had been a mere ferment at once became a high-grade fever. How many industries were making Model T's? How many other well-established products needed immediate redesign? One of the very conservative concerns that gave itself an affirmative answer to this question was the Eastman Kodak Company. After visiting a number of assorted designers their representative told me they had decided to entrust me with the redesign of two of their popular cameras. This was my moment of decision—the time to apply the lesson learned from the



1953 Studebaker designed by Raymond Loewy Associates

grand pianos. I told Eastman that I knew next to nothing about cameras, that I could only undertake the assignment if I could do the work in their own factory, working with their engineers; and I would need a year's contract for one week a month; and I set a fee high enough to make sure that my opinions would be respected.

Somewhat to my surprise, and I must confess to my relief, Eastman accepted my proposal. On 1st January, 1928, I began an association with Eastman which has continued ever since, with a maximum of rewards to me in pleasure, satisfaction, friendship and opportunities for gratifying achievements. For years I alone designed all Eastman cameras and other apparatus, and carried out many diverse projects. To-day Eastman has its own Appearance Design Section which I have helped to organize, and while my visits are fewer and briefer, I still review periodically all the work of these brilliant young designers, with the utmost good fellowship and unity of objectives existing between us.

Within less than eighteen months after joining Eastman, all my time was taken up by exciting new adventures in industrial design. Besides cameras and projectors I was doing thermal and optical instruments, glassware, the first modern shop in New York, and with my son, then a college student, I was developing a revolutionary automobile, which became an American classic, the Marmon 16. In every instance I adhered to the same policy—I insisted on working in my clients' factories, with their design engineers and their production engineers, developing each product so that it had the group of practical virtues that were expressed in the aesthetic values I tried to give it: it must be efficient in performance, and convenient to use; its forms must be adapted to the machines and materials that were used in its manufacture; its cost must be a proper measure of its worth to the purchaser; and it should give that purchaser visual and tactile pleasure throughout its lifetime of use.

In order to make sure that the design possessed these characteristics it must

be carried out in three dimensions, full scale if practicable, so that it could be seen from every angle and felt and handled as in use.

There was no one to teach me these principles of design: they had to be arrived at by plain common sense, by mentally exploring possible avenues of approach until at last one was found that led to the desired objectives. I do not claim that I was always successful, or even that any single project was ever wholly successful. But with each experience I seemed to progress a little farther than before in certainty and competence, and what I did was actually an advance, in simplicity and rightness, in unity and appropriateness, over what it had been customary to do before—which my clients, and their public, seemed to appreciate.

You see, it was the age-old experience of an apprentice gaining familiarity with his tools, learning what could best be done with them and what they could not do well. My tools then were factories full of machines, machines of great power and precision, and with the ability to repeat themselves exactly and accurately so long as the right materials were fed into them in the right way. To make them turn out proper and beautiful work called for a wholly different set of skills from those the old-time craftsman needed. No generation before had had to design by remote control. I might never touch a single one of the objects I designed. I could only create them in space, as a prototype which could be broken down into parts that would go through the machine and come out at last assembled in the form I had imagined.

Inevitably these were simple forms. Machines cannot indulge in the charming deviations, the pleasant, graceful elaborations which made the work of gifted craftsmen so delightful. Non-functional elaborations are costly, and distracting. Machine-made beauty must be found in the essential lines and forms, textures and colours and proportions of the thing made. But it is possible to create that living variety in unity, that unity compounded of a variety of harmonious elements—it is possible to do this as perfectly through machine processes as by any other tools. It is even easier with machines, because of their inescapable exactitude and precision.

This exactitude and precision have been equalled only once before in history: in the marvellously intricate system of geometrical relationships which Ictinus and Phidias worked out in the Parthenon. They could do it there because they were master designers using finely grained Pentelic marble which could be worked as accurately as steel. The remains of their mathematical masterpiece, even in their battered condition to-day, convey an effect of unparalleled vitality and complete integration.

Thus the special beauty which this machine age will create, in its ultimate triumphs, will be more closely allied to that achieved in the Periclean age in Greece than to anything else in the past. It will be, in the root-meaning of the word, a truly 'classic' beauty. The Greeks not only created this absolute beauty, they understood it philosophically. In Plato's remarkable 'Philibus' dialogue, Socrates is made to say that when he speaks of 'beauty of form', he is to be understood as meaning 'straight lines and circles, and the plane or solid figures which are formed out of them by turning-lathes and rulers and measurers of angles;



*Full size mock-up of the Boeing 707 Stratoliner, designed and built by Walter Dorwin Teague Associates in New York City to demonstrate the interior design of this aircraft. The mock-up was complete in every detail, with air-conditioning, day and night lighting, and all services operable*

for these I affirm to be not only relatively beautiful, like other things, but they are eternally and absolutely beautiful'. No one could define for us more adequately the ideal of absolute beauty which it is possible for us to achieve with our machine tools.

But the Greeks were not always building Parthenons, or seeking absolute beauty. They wrote the most hilarious comedies ever, never so funny as when seen in the original Greek theatres for which they were written. They were given, as used to be said of the French, to light wines and dancing, they had a flair for festivities and untrammelled bawdry. Surely there never were any more frivolously coiffed and gowned ladies, or more charming, than those shown in the somewhat archaic sixth- and seventh-century statues to be seen in the National Museum of Athens. For these ladies lovely mirrors and boxes and jewellery, and exquisite glass phials for perfume, were made in limitless, gay variety. They realized that the lighter aspects of life had their legitimate claims too.

So we of these times are not always solemn and portentous in our work. We are not always building monuments, demonstrating a consummate good taste. An enormous number of light and perishable objects are included in the furniture of our daily lives. We do not think that household or office appliances, packages for beer or soap powder, are beneath our notice. They too should add to the gaiety of our days, fit into the classic picture we are creating. Wherever industry shows its face to the public, we consider it should reveal a pleasant, attractive, friendly personality, and we are ready to create such a personality for it. Inevitably the people who live behind the façades we create assume these characteristics we give them, to the betterment of themselves and the world—that is, if they do not have them already, which usually they do. Otherwise they would not be sufficiently successful to use us. So smart shops, department stores, super-markets, gas stations, offices, headquarters and research buildings are better, I think, for the attention we give them.

In recent years the United States Government has realized that industrial designers have much to contribute both to defence activities at home, and to the furtherance of our foreign policies abroad. Important projects for the economic improvement of non-industrialized nations such as Greece, Lebanon, Jordan, Iran, Pakistan, Israel, Turkey, Uruguay, the Phillipines, Cambodia and Thailand have been entrusted to industrial designers. In this work such designers as Dave Chapman, Russell Wright, Peter Muller-Munk and the Akron, Ohio, firm of Smith, Scherr and McDermott, have been performing brilliantly.

Our country has been presented to people of other countries in international trade fairs all over the world—all the work of industrial designers. The very important American exposition to be held in Moscow this summer is being prepared by an industrial designer, George Nelson. Last year my son and our associates designed the United States Exhibit on the Peaceful Uses of Atomic Energy in Geneva, and for this a number of us had to become amateur nuclear physicists almost overnight. We also have three task forces at posts across the country—and have had for several years—working on secret phases of our guided missiles programme. We recently completed what is reputed to be the largest task ever assigned to an industrial designer, the interior design, furnishing and equipment of the new United States Air Force Academy in Colorado, which is the equivalent of an academic city of 12,000 people starting from scratch. As all the products of the Bell Telephone Laboratories are the work of Henry Dreyfuss, so all the interiors of the Boeing 707 Jet Airliner for eighteen airlines and the White House are ours.

I cite these varied activities to indicate how swiftly and widely our new profession has spread its influence in a little more than thirty years. I stressed, as typical, the way I personally at the start had to feel my way carefully to the principles and methods that must control work in a field where adequate trial, of the old kind, is not possible and error would be disastrous. We all went through this same lonely experience at first. In 1928 I knew of only two other men who were working successfully in this field where I was a draftee, not a volunteer, and I was not acquainted with either of them. It is not surprising that we all

AUGUST 1959

INDUSTRIAL DESIGN IN THE UNITED STATES

came to approximately the same conclusions, adopted the same methods; because those who did not, simply did not last.

Since then a number of us have written books on our subject, and some valuable studies have appeared in England. To-day, there are magazines on industrial design published in New York, London, Milan and Paris. In the United States 36 schools give courses in industrial design, 27 leading to college degrees. They are of varying levels of value, I must admit.

In 1944 Henry Dreyfuss, Raymond Loewy and I decided it was time to form a professional society. We collected twelve other colleagues whose work we respected, and incorporated the American Society of Industrial Designers. With rigid standards of membership, we now number 234. There are offices doing distinguished work all across the country, in large and small cities, from the Atlantic to the Pacific. It is no longer a lonesome calling.

I do not maintain that it is a consistently inspired calling. But I am always impressed at our various meetings by the seriousness and devotion displayed by older and younger men alike. They seem to realize that the future of the machine-made environment to which we have committed ourselves depends on them, so far as it is to have harmony and serenity and that soul-satisfying beauty men have always sought in the things they have made. Teamed with scientists, engineers and architects, assuming a great responsibility with even greater humility, we rather think we should be able to make a new world that will nourish our minds and spirits as fully as it serves our bodily welfare. We have the means: we have only to give these means direction. And that is not a small order.

*The Lecturer then showed a number of lantern slides illustrating the work of several American industrial designers, including Reino Aarnio, Dave Chapman, Henry Dreyfuss, Raymond Loewy, Peter Muller-Munk, Smith, Scherr & McDermott, Raymond Spilman, Russell Wright, and Walter Dorwin Teague Associates. The slides were chosen to illustrate the range of American industrial design, but especially to illustrate the work these designers have done for the United States Government in foreign trade fairs, and in United States Government aid programmes in non-industrialized countries.*

THE CHAIRMAN: Well, the way in which Mr. Teague's lecture has been received indicates what we feel about it! We are all indebted to him for coming over to this country to give us this review. I am now going to call on Professor R. D. Russell to express our appreciation.

PROFESSOR R. D. RUSSELL (Master of the Faculty of Royal Designers for Industry): Walter Dorwin Teague's name has been a legend in this country for a very long time, as that of one of the great American industrial designers. He has been, and clearly still is, a pioneer, and I think he has probably done more than anybody else to make this profession of industrial design both respected and respectful. It has been fascinating to have the legend materialize, to listen to his stimulating and informative paper, and to see his excellent slides. I have great pleasure in proposing a vote of thanks to Walter Dorwin Teague.

*The vote of thanks was carried with acclamation, and the meeting then ended.*

## BRITAIN AND THE TECHNICAL DEVELOPMENT OF EASTERN COMMONWEALTH COUNTRIES UNDER THE COLOMBO PLAN

*The Henry Morley Lecture by*

*W. RAILSTON, M.Sc., Ph.D., F.Inst.P.,*

*Scientific Adviser, Colombo Plan, delivered to the  
Commonwealth Section of the Society on Thursday,  
16th April, 1959, with Sir Willis Jackson, F.R.S.,  
D.Sc., D.Phil., M.I.E.E., M.I.Mech.E., F.Inst.P.,  
Director of Research and Education, Metropolitan-  
Vickers Ltd., in the Chair*

THE CHAIRMAN: I am sure you will all be glad to know that Mrs. van Dulken, the daughter of Henry Morley who endowed this series of lectures, is here this evening, and I think you may perhaps like to show your appreciation.

I am one of those fortunate people who have been privileged to go abroad a good deal; in particular to countries where the standard of living is a good deal lower than it is here, and in which there is great need and enormous scope for economic improvement. As an electrical engineer I am also intimately concerned in the fantastic pace of scientific and technological progress and am aware of the extent to which, if suitably applied, these scientific and technological developments could contribute to this economic improvement. Furthermore, both during my fairly long period in university life and in my present position in industry I have discovered that such representatives of the underdeveloped countries as have come to this country for further education and training lack little, if anything, in innate ability relative to our own young people. Unfortunately the number of really well educated and well trained men and women in the underdeveloped countries is as yet very small, taken in relation to the magnitude of the problems with which these countries are faced, and it is a matter of considerable urgency that their inadequacies in this respect should be resolved.

These inadequacies exist not only at what we in engineering call the professional level, but also at the technician and craft level and in respect of the general education of their populations at large. The correction of them will demand help in all sorts of ways from more fortunate countries, such as our own. Dr. Railston has spent the last two years helping in this process. He has visited India, East and West Pakistan, Ceylon, Singapore, Thailand and Nepal, and it is against this background and his experience in the Commonwealth Relations Office that he is going to speak.

*The following lecture, which was illustrated with lantern slides, was then delivered.*

### THE LECTURE

The Colombo Plan for Co-operative Economic Development in South and South-East Asia originated from a meeting of Commonwealth Foreign Ministers at Colombo in January, 1950. Its object was the raising of the living standards of the people of that great region with the assistance of Australia, Canada, New Zealand and the United Kingdom in a co-operative effort. The Commonwealth

countries concerned, in addition to those named above, were initially India, Pakistan, Ceylon and the territories of British Borneo and Malaya (now a self-governing federation). To-day all the countries of the East are members, except China and North Vietnam. Their people number about 670 millions, or a quarter of the world's population.

The development involved three kinds of aid—self help (the most important for real progress), external help and mutual help. The last type is that which makes the Colombo Plan probably unique. Help given by a wealthy country to a poor one may sometimes produce something less than gratitude. In the co-operation of nations which is the Colombo Plan, most countries are giving as well as receiving. This has a tonic effect on national pride of the highest psychological importance. For instance, Pakistan has been helped by Australia, Canada, India and the United Kingdom, but she has herself provided training for a total of ninety-two students from Burma, Ceylon, Indonesia, Japan, Malaya, Philippines and Vietnam. This Plan can justly be called a Commonwealth scheme which has spread outside the Commonwealth.

The mutual and external help, already mentioned, falls into two divisions—capital aid and technical assistance. The United Kingdom provides capital and technical assistance to the countries of South and South-East Asia through both private and governmental channels. During the Colombo Plan year 1957-8 the sterling area countries in South and South-East Asia utilized about £200 million of their sterling balances. The principal drawings were made by India towards financing the second Five Year Plan.

The United Kingdom is the traditional source of private capital for many countries of the area and, though no figures are available to show the amount of new private investment or re-investment, United Kingdom companies and private investors have continued as an important source of capital for Colombo Plan countries.

The amount of United Kingdom Government disbursements to Colombo Plan countries in the area up to June, 1958, was £92.5 million.

Capital aid given by the United Kingdom has been under many heads. Thus the Commonwealth Development Finance Company has loaned £1 million to the Sui Gas Corporation, whose work is the biggest single advance ever made in the solution of Pakistan's fuel problems. Discovered in 1952, the gas produced per year is already equal in heating value to 700,000 tons of coal. Karachi is connected to the gas field by a pipe-line 348 miles long. In 1953 a £10 million loan was made to Pakistan by the United Kingdom Government for the general development of food production, and recently a further £10 million credit has been granted. In 1956 the same source made a loan of £15 million to the Indian Government to cover foreign exchange requirements for the one million-ton Durgapur steel plant being built by a consortium of thirteen British firms, and British banks have loaned an additional £11.5 million. In September, 1958, India was promised immediate further assistance of £38.5 million for general development.

Financially, the Technical Co-operation Scheme, which is an integral part

of the Colombo Plan, has been much more modest, but its influence has proved to be out of all proportion to its cost. Technical assistance is acting like a chemical catalyst in promoting developments.

Its work is concerned with technical training and, to a smaller extent, with practical encouragement for research. It is carried out by the provision of experts, training places, and equipment.

Common purpose is secured by the existence in Colombo of the Council for Technical Co-operation, which has regular meetings attended by local representatives of each participating country. The Council is assisted by the small, full-time Colombo Plan Bureau which maintains records of aid, requested and supplied, and dispenses information about the Plan. The actual arrangement of aid is made entirely between the two countries involved on a bi-lateral basis.

The total contribution by the United Kingdom to all South and South-East Asian members of the Technical Co-operation Scheme, from July, 1950, to February, 1959, has been:

Experts	...	...	...	...	...	...	332
Training places in the United Kingdom	...	...	...	...	...	...	2,434
Expenditure on equipment for training and research	...	...	...	...	...	...	£1,377,000
Total expenditure on experts, trainees and equipment	...	...	...	...	...	...	£4,300,000
Proportion of total spent on India, Pakistan and Ceylon	...	...	...	...	...	...	£3,338,000

The amount of money available is not the only factor limiting the amount of aid. It has been the wise rule that any request for assistance must be approved by the central government of the requesting country. The donor country does not induce requests, though it may give advice, if invited. This has undoubtedly prevented the offer of aid which might have been accepted for politeness rather than necessity, causing wastage of limited funds. Further, the number of training places in donor countries is not inexhaustible. Indeed, in the United Kingdom, in specialist subjects like atomic energy, the number of places is strictly limited.

The British Government agreed in 1955 to spend £7 million on technical co-operation over seven years commencing in April, 1956. At last year's Seattle meeting of the Consultative Committee of the Colombo Plan this figure was increased to £9 million.

Through the Technical Co-operation Scheme, the United Kingdom is supplying experts for training, for development and for research. The greatest number have been supplied to assist transport and communications, with doctors and engineers representing the next largest proportions. After them come experts in industry, education, banking, administration, agriculture, fuel and power.

In providing trainees with facilities for instruction in Britain, we have been guided by three principles: the training must help both the student and his country and he must be qualified to take advantage of it. Tuition is given in a wide range of institutions. Universities, technical colleges, hospitals, factories (both publicly and privately owned), farms and research laboratories are all pressed into service. The definition of training has been taken in the widest sense



*[Crown copyright reserved]*

*A Pakistan port administration officer (centre) studies dock systems in the United Kingdom under the Colombo Plan*

and has included agriculture, fisheries, engineering, medicine, education, communications, public relations and social services, to name only a few.

It is believed that in giving equipment under the Scheme the greatest impact is obtained by assisting technical training and, to a lesser extent, research likely to produce an early improvement in the standard of living.

So far, I have given a general description of the principles and conduct of the Colombo Plan, with emphasis on the Technical Co-operation Scheme (which I shall now abbreviate to 'the Scheme'). This, however, is a prosaic account of a great project which is improving the lives and future of hundreds of millions in Asia. In the course of my work for the Scheme I have had the good fortune to travel widely in India and Pakistan and a little in Ceylon, as well as in some non-Commonwealth countries. It may help you to visualize it more clearly if I give a personal account of results which I have seen in the sub-Continent.

Let us begin with Pakistan, a country which is mainly agricultural and which at its inception had so few factories that it had much industrial leeway to make up. It has a great need for skilled craftsmen, foremen and technicians. These men cannot be produced in a few months, but under the Scheme the United Kingdom is helping in several ways to provide such skills in a few years. Thus the Government Technical Institute, Lahore, gives a four-year course of

vocational training in the trades of mechanical, electrical, radio and automobile engineer. It was in need of modern equipment and this the Scheme has been able to supply to the amount of £43,000. It now has a well-equipped foundry, machine shop and electro-plating department together with radio workshop for construction and repair, and an electrical engineering laboratory. Instruction is assisted by talking film and film-strip projectors and an epidiascope. A total of seventy-five students a year is trained in these trades. They find ready employment.

Until a few years ago, schools in Pakistan gave a strictly academic training with plentiful use of paper and blackboard, but little opportunity to do practical science or to learn the use of tools. The Pakistan Government has begun to alter this by instituting eight technical high schools. In these a broad, well-balanced education is given in all the usual academic subjects with, in addition, practical training in excellent laboratories and workshops using equipment provided by the Scheme at a cost, to date, of £88,000. These schools are well spread through West Pakistan, from Karachi in the south to Peshawar in the north. There is one such school at Dacca in East Pakistan.

I was privileged to see something of the work of the Thal Development Authority in an area of five million acres, about one hundred miles west of Lahore. Here Pakistan, with capital and technical aid under the Colombo Plan from Australia, Canada, New Zealand and the United Kingdom, has brought under the plough an area of 500,000 acres where there was desert five years ago. Here 50,000 families have been settled in 700 new villages. Sixty-five new schools have been established, including a technical high school at Jauhaurabad. After a tour of the latter, I was waited on by twelve progressive citizens who wished me to convey their thanks for the Colombo Plan equipment the school had received and to hope that it might be favoured with further help. That they had this close interest in a school in their town showed the good civic sense which exists there.

My subject is concerned with British aid, but I find it difficult to refrain from telling you of the great Warsak hydro-electric and irrigation project, eighteen miles from Peshawar, for which Canada is providing the foreign currency together with much equipment and technical knowledge. The Kabul river is being controlled by a dam 220 ft. high to provide 160 megawatts of power and enough water to irrigate 110,000 acres. Canadian and Pakistan engineers supervise the work of 6,000 labourers, many of whom are Pathan or Mohmand tribesmen, acquitted themselves well in very unfamiliar work. The drilling of a rock tunnel 3½ miles long and 15 ft. in diameter has been entrusted entirely to Pakistan engineers, using Canadian equipment. Warsak is an outstanding example of Colombo Plan co-operation between two Commonwealth countries. Completion is expected in 1960.

In Pakistan, few industrial firms maintain testing or research laboratories. It is necessary therefore for this work to be undertaken by the government. The laboratory of the Council for Scientific and Industrial Research at Karachi was initiated in a few army huts about eight years ago and has already done



[Crown copyright reserved]

*An Indian student makes final adjustments to a centrifuge which the United Kingdom Government is presenting to Ceylon's Institute of Scientific and Industrial Research*

creditable work, especially in developing the use of indigenous materials. The United Kingdom has given equipment under the Scheme to the value of £83,000, and has also helped the Central Standards and Testing Laboratories at Karachi and Dacca to the extent of £18,000.

The education of women has not been overlooked. Assistance has been given, for example, to women's colleges in Peshawar and Lyallpur in the form of books and science-teaching equipment.

In a country of great distances, telecommunications training and development is clearly of importance. Schools for this purpose at Lahore, Haripur, Karachi and Dacca have been generously aided with equipment, and British experts have also been sent.

British books are important ambassadors. Even in technical subjects they

reflect not only British achievements but also the British method of approach to a problem. Book gifts have been made to at least forty universities, colleges, schools and research laboratories in Pakistan. A representative collection of British works of reference, classical and modern novels, and scientific and technical books was recently presented to the fine new Dacca public library by the United Kingdom High Commissioner.

A small but active school of research in modern physics exists at Government College, Lahore, under the direction of Professor R. M. Chaudhri. Much of the equipment was given by the Scheme, and all is in busy use by about thirty research students. The gift has encouraged new determination, and as much as possible of the additional apparatus required is being made in the laboratory workshop. The quality of the glassblowing was impressive. Several original researches completed in this laboratory have recently been described in British scientific journals, with acknowledgements to the help of the Colombo Plan. These additions to knowledge, together with the trained workers being produced, constitute a fine example of the results of Commonwealth scientific co-operation, of which H.R.H. the Duke of Edinburgh recently spoke at Karachi.

Persons proceeding to the East to give instruction in a specialized subject carry a double responsibility, for they are also regarded as ambassadors of the British way of life. Loyal service is being given by British Colombo Plan experts to the country of their secondment. Thus an engineer from our Post Office has been in charge of a telecommunications training establishment near Rawalpindi since 1953, where he has done much to introduce modern methods. It was gratifying to be told, by a senior Pakistan civil servant, that he is also a leader in the local social and sporting life. In addition, Pakistan has received British experts on diesel engines, steel rolling mills, power alcohol production, pharmacology, technical education, mine surveying, banking—and income tax.

It is a pleasure to mention here that Pakistan is providing training courses in railway operation and signalling, and also in air traffic control to Burma, Malaya and the Philippines; this illustrates the two-way nature of the Colombo Plan.

Pakistanis have come to Britain for training in a wide range of subjects from agriculture to transport, from social service to fisheries, and in almost every variety of engineering. The 2,000th Colombo Plan trainee arrived in Britain in May, 1958. He is Dr. Mazhur-ul-Islam from East Pakistan. A medical graduate of the University of Dacca, he is studying medical applications of radio-isotopes at Harwell and at hospitals. He will remain in this country for a year. Sixteen Pakistanis are now studying nuclear subjects at Harwell or in British colleges.

Ceylon has, from the start, been particularly alive to the potentialities of the Colombo Plan. One of the projects there which cannot fail to attract attention is the development of the Gal Oya valley in the Eastern Province. This has at least three purposes—the production of hydro-electric power, irrigation, and some industrialization. The work was started in 1950 and there are now considerable results to be seen. It is hoped eventually to reclaim 300,000 acres of land and settle 20,000 families. This is truly reclamation, since in the days of the early kings of Ceylon this land was highly cultivated until it was depopulated, perhaps



[Crown copyright reserved]

*Two Ceylonese nurses examine an X-ray plate with an English colleague.  
(Photograph taken at the Arlesey branch of the London Chest Hospital)*

by the spread of malaria. As in almost all developments, technical skill is required. To increase it, the Gal Oya Technical Training Institute was started under an Australian principal. Some of the students already work in industrial projects in the valley and thus gain valuable practical experience on full-scale machinery. The United Kingdom has given £14,000 worth of equipment to the Institute. The whole Gal Oya development is an outstanding example of Colombo Plan co-operation, involving Australia, Canada, India, Japan, New Zealand and the United Kingdom.

The assistance of handicrafts in secondary schools in many parts of the island, to the extent of £65,000, has greatly helped to broaden hitherto strictly academic education. Workshop equipment made available under the Scheme to the Junior Technical School, Galle, should increase the number of skilled craftsmen for whom the district is famous.

In Ceylon, as in India and Pakistan, there is a great need for well-equipped laboratories able to undertake development work for government departments and private firms. This has been admirably met by the Ceylon Institute of Scientific and Industrial Research at Colombo. It was established in 1955 as an autonomous corporation under a special Act of the Ceylon Parliament. It is receiving assistance for five years from the Ceylon Government and the World Bank. Equipment to the value of £81,000 has been given by the United Kingdom

under the Scheme. It is now housed in a permanent building with excellent facilities and has already given help to every Ceylon industry. Thus it has made improvements in the manufacture of plywood, helped the Tea Institute, and made better dessicated coconut and cinnamon oil. New substances have been produced from rubber waste and new equipment designed for local factories. The technical library is the best of its kind in Ceylon and is in constant use.

The University of Ceylon originated in Colombo, but some years ago a new site, surely one of the most beautiful in the world, was selected at Peradeniya, near Kandy. Already some of the permanent buildings are completed and in occupation. With the considerable development of hydro-electric power in the island and the need for high voltage transmission lines, the university's electrical engineering department is wishing to teach high voltage testing. Under the Scheme we have assisted by giving a British made 240 KV. testing set, which will be sent to Peradeniya as soon as accommodation is available.

In the Physics Department, which is still at Colombo, Professor Mailvaganam, an old student of Lord Rutherford at Cambridge, heads a small team engaged in important research on cosmic rays. In addition, an effort is being made to start a radio-isotope course at both undergraduate and postgraduate levels. The specialized equipment required, most of which cannot at present be made in Ceylon, is being supplied by the United Kingdom.

Other institutions to receive apparatus have been the Forest Research Laboratory, the Colombo Technical College and the University chemical laboratories.

Many United Kingdom experts have worked in Ceylon under the Scheme. At Gal Oya a rice mill engineer has been helping for two and a half years, together with experts on batteries, pneumatic tyres and mechanical engineering. Tuberculosis is common. British experts have been advising on the best remedial measures. Three thoracic surgery teams, consisting of surgeons and nurses, have been sent to the island.

Other advisers have ranged in kind from electrical and radio engineers to actuaries and omnibus transport organizers. It is with mixed feelings that I report that United Kingdom income tax experts have also been giving instruction in their craft.

From July, 1950, to January, 1959, Ceylon students had received 461 training places in the United Kingdom. These were for many subjects, including agriculture, engineering, medicine, administration and education. Recent places have included two for ear, nose and throat surgeons, of whom there is a shortage in the island.

Ceylon has herself made forty-seven traineeships available to foreign students, principally from Burma, Malaya and Nepal. As an example, she has provided training for four Burma Railway engineers in diesel engine maintenance.

Let us now transfer our attention to India. Here, in the field of self-help, India has established more than twenty national laboratories, each studying practical subjects likely to have an early effect on the standard of living. Thus roads, metallurgy, fuel, leather, food, drugs, building and agriculture are all

receiving attention. Most of these laboratories have had United Kingdom equipment and staff training under the Scheme. H.R.H. the Duke of Edinburgh, on his recent tour of India, visited the steel-making town of Jamshedpur. Here I saw the National Metallurgical Laboratory which has received apparatus worth £42,000. That this has been put to good use is shown by the development there of a process to make stainless steel in which nickel is replaced by manganese, which is commoner in India. Here, too, a simpler method of removing phosphorus from pig iron has cheapened Indian steel production.

The Central Food Research Institute, Mysore, which I have visited, is working with marked success on the production of acceptable and nutritious foods from lower-grade raw materials. Thus a new food, rich in protein, has been made from groundnut flour and pulses. In areas unsuitable for rice cultivation tapioca can sometimes be grown. From this a new rice substitute has been produced. Customer reaction has been considered by making the new food look and taste like rice. Laboratory instruments to the value of over £11,000 have been supplied under the Scheme, and some of the staff have received post-graduate training in Britain.

Three of India's great needs are for more irrigation, more electric power and better harbours. Surprisingly, research which will help to supply all three is being carried on in one institution, the Central Water and Power Research Station, Poona. This was established in 1919 by Sir Claude Inglio. Not till about thirty years later did he start a similar laboratory at Wallingford in Berkshire. At Poona, they are concerned with the control of rivers to prevent erosion and scouring, the silting of irrigation canals, hydro-electric dams, and the construction and improvement of harbours. For good measure, they have a large hydraulic tank in which the most appropriate shape of ships' hulls can be determined. In its work on the control of rivers and the design of harbours, an accurate model, complete with flowing water, is made of the site to be investigated. Indeed, Poona was one of the first stations to use this method. A few of its successes include the removal of river bank erosion which was threatening to destroy the Rupnarayan railway bridge and the prevention of silting in important irrigation canals. The station was shown to me by an Indian hydraulics engineer, who had received advanced training at the Imperial College of Science and Technology, London, under the Colombo Plan. He pointed out model experiments to improve the navigation channel from the sea to Calcutta and others to make Madras harbour a safe refuge in storms. This laboratory is receiving £37,000 of equipment from the Colombo Plan. It has, itself, given advice on the removal of silt from Burmese irrigation canals in the true spirit of technical co-operation.

At the Institute of Technology, Kharagpur, an attempt is being made to reproduce the Massachusetts Institute or one of the continental technical universities such as Zurich or Stockholm. This standard has not yet been reached, but the results are already impressive. There are about 1,700 students in residence and their number is increasing. In addition to the normal technical college subjects, instruction is given in architecture, rubber technology, agricultural engineering

and shipbuilding. Most of the machine tools in the main workshop are British and were given under the Scheme at a cost of nearly £30,000. Some of the Indian staff have had training in Britain, and British guest professors have been provided.

The great Durgapur steel project, already mentioned, will make heavy demands on skilled staff, both in technical knowledge and in numbers. To deal with this problem the Scheme is bringing 300 future supervisory staff and technicians to Britain at the rate of seventy-five a year. They are being trained at steel works and factories throughout the country. No large steel firm in Britain is without some Durgapur trainees. In addition to acquiring high skill in iron and steel production they are getting to know British steel managers, foremen and workmen, and the British way of life. Facilities are given for them to attend suitable courses and conferences.

In Lucknow, the Chattar Manzil Palace is a beautiful building with a varied history. Built as a palace of the Nawab of Oudh in 1814, it was later a club for many years. Since 1951 it has assumed a new rôle as the Central Drug Research Institute. Its first director was Sir Edward Mellanby, and a British connection is being maintained through Dr. Hawking of the National Medical Research Institute, Mill Hill, who is doing research in amoebiasis and protozoal diseases as a Colombo Plan expert. Some of the Indian staff have received post-graduate training in the United Kingdom under the Scheme. The Institute has been especially active in the preparation of drugs from indigenous botanical sources.

India has entered fully into the co-operative aspect of the Scheme for, from 1950 to 1958, she has provided training for 743 foreign students, especially from Nepal and Ceylon. The Statistical Institute at Calcutta has become a great meeting place for students from Colombo Plan countries.

To move from developing projects to one which has just been born—the Indian Government has decided to establish a new College of Engineering and Technology at Delhi. The United Kingdom Government will endeavour to recruit and provide to the Government of India, under the Technical Co-operation Scheme of the Colombo Plan, eight to ten members of the professorial staff for about five years. In addition the Federation of British Industries, in co-operation with four professional institutions, has agreed to sponsor the raising, in certain sections of British industry, of a fund of £250,000 to be spent on equipment from the United Kingdom. The Government of India will provide the new buildings and meet running costs and other local expenditure in India. The United Kingdom contribution is likely to be the equivalent of about £500,000. The foundation stone of the college was laid by H.R.H. the Duke of Edinburgh on 27th January this year. Instruction will be given to 1,250 under-graduate and post-graduate students, and there will also be facilities for research. The main subjects of study will be civil, mechanical, heavy electrical, electronic and chemical engineering, with full support from the basic subjects of mathematics and physics. Strong efforts will be made to get supervised industrial experience for the students during their courses. There will be a close affiliation with the University of Delhi.

In this brief account, I have tried to show that the Technical Co-operation Scheme of the Colombo Plan has produced an effective, flexible combination of external help and national effort to accelerate social and economic development in South and South-East Asia. Though my subject has been Britain's part in this work, I have also tried to show that the whole Scheme is now genuinely co-operative and that almost every member country is giving as well as receiving. When it is remembered how heavily the aftermath of war lay on this area in 1950, this new spirit is a remarkable achievement, auguring well for the future.

Any opinions expressed in this lecture are my own and not those of the United Kingdom Government.

#### DISCUSSION

MR. P. K. SHAHANI: The true spirit of the Commonwealth has perhaps only been reflected in the Colombo Plan, but the point where the Colombo Plan seems to have failed is because of its competitors. Reference was made to the procedure by which, say, a Vice-Chancellor of a University can procure money through the recommendation of his government; the alternative he has is to apply direct to organizations such as the Ford Foundation, the Asia Foundation, the S.E.A.T.O., the Technical Assistance Administration, and so on. But first of all he does realize that, by appealing through the Colombo Plan medium, he would be getting better skill and perhaps less money. On the other hand if he is not going through the government channels, and is going to apply to the Ford Foundation and such others, he will be getting more money and less skill. This is rather a tragedy, because it means that a Vice-Chancellor who has not a good reputation with his Prime Minister cannot somehow or other get better skill and better money. This would be easily remedied if we had some form of central organization which could get the money from organizations such as the Ford Foundation and the Technical Assistance Administration and S.E.A.T.O. and then distribute it through the Colombo Plan and such others. What are the lecturer's views on this score?

THE LECTURER: Well, I am shocked to hear that there are some Vice-Chancellors who are not on good terms with their Prime Ministers. [*Laughter.*] I would never admit to have met any such, though I have met a number of Vice-Chancellors in India and Pakistan. I can only accept your greater experience. I think the plan you put forward has obviously many advantages. Maybe some of the organizations who are supplying the money would see that it had disadvantages too. You might find, for example, that the Ford Foundation was giving money which was later distributed, and that the recipients were really quite ignorant that it had come from the Ford Foundation. The Ford Foundation might not like that. But I am sure the idea of a central organization which you mention would have some advantages.

SIR SELWYN SELWYN-CLARKE, K.B.E., C.M.G., M.C. (Chairman, Commonwealth Section Committee): May I say how much I enjoyed Dr. Railston's eloquent and very informative lecture? I wonder if I might ask him his views on the possibility of adapting the Colombo Plan for Africa and the Caribbean?

THE LECTURER: Assistance is also being given through similar administrative machinery to Ghana. It operates under a different name and is not part of the Colombo Plan. Mr. Hart, whom I have mentioned, does work on problems of that sort. As to the Caribbean, I think that at any rate the British territories of the Caribbean get assistance already through the Colonial Welfare and Development Fund. There is another organization called F.A.M.A., the Foundation for Mutual Assistance in Africa south of the Sahara, which operates in a similar way to the Colombo Plan, but is distinct from it. It is international in character.

Help is already being given to Central Africa and the Caribbean by the two organizations I have mentioned. The various United Nations funds also operate in these areas. I know of no present project to extend the Colombo Plan to the places you mention.

DR. REGINALD LE MAY: For twenty-five years I lived in Siam and for eleven years of that period I was the economic adviser to the Siamese Government. In that capacity I travelled all over North India, Burma, Malaya, Siam and Indo-China, studying their rural needs. I realize of course that our lecturer, who has given us an excellent survey, is primarily concerned with technology, but I am sure it must be in all our minds to-day that the vast majority of the inhabitants of these countries are peasants living daily on 'a bowl of rice', and I wonder whether he is in a position to tell us what steps are being taken and have been taken under the Colombo Plan to ameliorate their condition?

I was sent by the Siamese Government to study rural co-operation and I think as a result I was the means, or part of the means, of spreading rural co-operative credit societies throughout Siam, where I believe they have flourished ever since, although I have no actual details to give now.

THE LECTURER: I am pleased to take the opportunity to tell you what has been done in agriculture. I will try to cover the field not merely of what Britain has done, but also of what other partners in the Colombo Plan have done. You will remember I told you that there are three ways in which the technical co-operation scheme works: through experts, trainees and equipment. We do not give capital aid, so there is no question of the Technical Co-operation Scheme giving, say, one hundred tractors to an area. That is not our function. There are other organizations which are willing to consider such things, but we do not. A very curious situation arises about agricultural experts. I was making inquiries to-day from some people in our office who know about such requests, and they told me that they have had very few requests for agricultural experts from India, Pakistan or Ceylon. It is a surprising thing, but it is true.

However, in the matter of trainees I also made some inquiries. We have given facilities for 140 trainees, all in thoroughly practical subjects of agriculture. They have been studying at Ministry of Agriculture Research Stations and working with the National Agricultural Advisory Council of the Ministry and so on.

We have given equipment to various agricultural laboratories, but I would be the first to admit that the equipment that one would like to give for agriculture is tractors, harvesters, combines, and so on—all of which, of course, are outside the terms of reference of the United Kingdom Technical Co-operation Scheme. They are capital aid.

Australia, Canada and New Zealand, all agricultural countries, have, however, given very great help, not only on the training side but also in capital aid. They have actually given tractors and harvesters, seeds and fertilizers.

So that, in all, a beginning has been made with the problem. I am sure you would be right to say that a great field of effort remains in agriculture, but a start has been made, especially by Australia, Canada and New Zealand, and we, in the United Kingdom, have provided the trainee facilities I mentioned.

SIR HAROLD SHOOBERT, C.I.E., E.D. (Secretary, The Pakistan Society): Your first questioner, Mr. Shahani, emphasized the valuable influence which the Colombo Plan has had in consolidating the Commonwealth. He then went on to mention competitors. Could Dr. Railston tell us whether among those competitors the Iron Curtain countries have had any influence?

THE LECTURER: Would you mind if I asked you a question first? When you say 'any influence', do you mean in provoking us to give more aid, or have they had influence themselves in giving aid?

SIR HAROLD SHOOBERT: I rather meant influence in competition with the benign influence of the Commonwealth; shall we say—influence in inculcating Communist ideas?

THE LECTURER: That depends on the country that you are thinking of. I do not want to be specific here, speaking almost in public. They have had more success in some countries than in others. But I would say that until recently a great deal of help which Russia has given has been theoretical, rather than practical. There are one or two outstanding exceptions to that statement, but I am on very safe ground in saying that the help given by the Western world—not only by Britain but by the Western world in general—to the East (I am thinking especially of India, Pakistan and Ceylon) has greatly exceeded that given by the Iron Curtain countries, in terms of pounds, shillings and pence. At any rate, that is my experience. I have not seen any considerable amount of material help given by Russia, and I have not gone out of my way to avoid hearing of such things.

MR. B. D. BOIG (The British Non-Ferrous Metals Research Association): May I ask if the lecturer is entirely satisfied with the machinery for securing training places for Colombo Plan students in this country, or does he think that some material improvement could be made in this respect?

THE LECTURER: I think that when one remembers that all sorts of technical training establishments in Britain are now almost always in a state of strain, almost always bursting at the seams, then those training establishments, whatever they are, do quite well in allotting us places for Eastern students. I suppose no system is perfect, but I think it works quite satisfactorily at present. I should not like it to be said that no possible improvement could be made, but I cannot think of any major improvement. At a time when our own Ministry of Education is trying every year to increase the number of British technical students, training establishments are placed in a great difficulty when asked also to take large numbers of Eastern students. I think it is rare for an Eastern student to be refused training in this country because there is not a place for him to go to. I should not like to say that it has never occurred, but I am quite sure it is very infrequent.

MR. D. G. HEMMANT (Powell Duffryn Technical Services Ltd.): Dr. Railston has emphasized the co-operative and self-help aspects of the Colombo Plan, and obviously for that aspect the provision of laboratory equipment and so on is very important. He also emphasized the training aspect, particularly the very considerable work in training people who are going to operate in projects which have been decided on and begun. It seems to me that before you reach the point of operating a project there is quite a considerable gap—that is in the detailed planning of many of these projects, particularly the engineering ones. The total annual capital value of the projects which are being implemented in the Colombo Plan Area must run into several hundred millions of pounds per year. As Dr. Railston pointed out, these countries are trying to carry out these programmes with too few technical people, and that scarcity is made even more acute by the fact that they are trying to do in ten years, perhaps in one generation, what the more developed countries have done in one hundred years. So that this scarcity of technical men is almost crippling.

Now one of the things which technical men are needed for is the detailed planning. If you do not have the planning done really well you can waste an enormous proportion of that several hundred million pounds. From my own work I know there is a need for technical help in planning these projects, and I should like to ask Dr. Railston, first of all, whether he agrees with that, and also what help the Colombo Plan proposes to provide to fill that gap. I should perhaps say that I am connected with one major instance where the Colombo Plan provided very considerable initial help in the way of feasibility study, which I think helped to get the project going, and as a result the

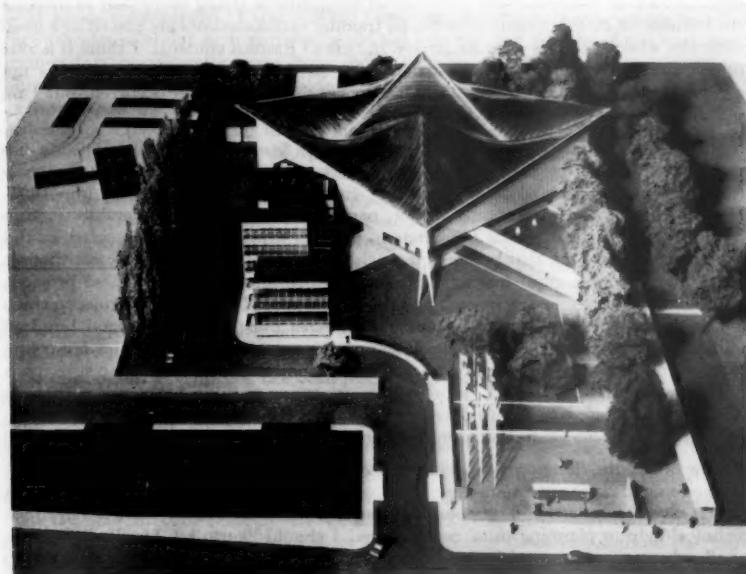
project is now going ahead involving something like £50 million worth of capital cost over a period of years. About 50,000 people are going to live in the township which is going to be built around the project—so the value of assistance of that kind can very well be illustrated by that particular project.

**THE LECTURER:** I presume you are referring to the lignite deposits south of Madras. I think the general answer is that we have already expended quite sizeable sums of money on consultancy, where we feel there are real possibilities in the project and where the government of the country concerned has requested us to give consultant assistance. We have not been approaching governments, saying to them, 'You should ask us to help you with this and that'; we have rather taken the other line, that if people really want help they will ask for it. Our funds are not limitless, and there is no need for us to go around, cap in hand, trying to get rid of money. As you know, that is a very easy thing to do. If we have been sure of a high possibility of success in a new project, such as in the one you mention, and if we have had a clear-cut request from the government concerned for that consultancy, then we have not dodged the issue, but have engaged consultants. There are a number of examples of that.

*A vote of thanks to the Lecturer was carried with acclamation and, another having been accorded to the Chairman upon the proposal of Sir Selwyn Selwyn-Clarke, the meeting then ended.*

### GENERAL NOTES

#### THE NEW COMMONWEALTH INSTITUTE BUILDING



The photograph reproduced here shows the model for the new Commonwealth Institute Building, for which the plans have lately been announced. The new premises,

replacing the present accommodation in the Collycott building in South Kensington, will be erected on a site  $3\frac{1}{4}$  acres in extent at the southern end of Holland Park, fronting Kensington High Street. The Institute will consist of a main exhibition block (having a copper-sheathed, tent-like roof and walls of translucent glass) with a wing on the western side. In the wing will be housed a restaurant, a reference library and reading room, a cinema, and a gallery specially designed for temporary exhibitions.

In the layout of the site, which maintains as far as possible the open character of the park to the north, care has been taken to ensure that, although the building lies well back from the road, it can be clearly seen from Kensington High Street. Visitors will enter through the forecourt (to the right of the model), passing open lawns to the main entrance of the exhibition building, the interior design of which is planned as an integrated whole. The main exhibition hall is entered by a gentle ramp leading to a circular platform. From this platform visitors will see exhibitions devoted to all the countries of the Commonwealth rising round them in three tiers, and from here, by means of short flights of stairs, they may proceed to the country of their choice.

The estimated cost of this new building is £725,000. Work will begin in the spring of 1960, and will, it is hoped, be completed by 1962. The architects are Messrs. Robert Matthew and Johnson-Marshall. In the words of the recently published Annual Report of the Institute, 'their purpose has been to create a building of the most modern design . . . intended to be of a character which will both be worthy of the Commonwealth itself and express the young and vigorous outlook of the Commonwealth peoples'.

#### PROFESSIONAL PRACTICE IN COMMERCIAL ART AND DESIGN

*A Syllabus for the Study of Professional Practice in Commercial Art and Design* has recently been drawn up by the Education Committee of the Society of Industrial Artists under the chairmanship of Mr. Milner Gray, R.D.I. This document is intended for students who are taking advanced courses in commercial or industrial design and who wish to become Licentiates of the S.I.A.; and it is devised to equip them with a sufficient understanding of design procedure to enable them to embark on private practice or to administer a design department. The syllabus is divided into two parts. Part I, which has just been published (price 1s. from the S.I.A.), provides a basis for general knowledge of professional practice and includes sections on the designer/client relationship, methods of payment and calculation of fees, keeping accounts, income tax records, the sequence of a typical assignment, and the conveyance of copyright. Part II, which is in preparation and will be issued later, is concerned with specialized knowledge relating to particular groups of industries.

#### DESIGN AWARD FOR COTTON FASHION FABRICS

The periodical *Vogue*, in collaboration with the Cotton Board Colour Design and Style Centre, is sponsoring a design award for cotton fashion fabrics intended to draw the attention of textile firms and the public to the high standard of design which young British artists are achieving in this field. The competition is open to all young artists under the age of 35. Consideration will be given not only to actual textile designs but to decorative drawings or paintings of a kind calculated to inspire them. Each competitor may submit not more than three entries. At least ten awards of £100 each will be made, and all the winning designs will be produced in fabrics and publicized in *Vogue* during the spring of 1961.

Entries for the competition must be submitted by 6th November, 1959, to 'Cotton Fashion Fabric Award', *Vogue* House, Hanover Square, London, W.1. Full particulars of the competition may be obtained from Mrs. V. F. Champion at the same address.

## THE SOCIETY OF ARTS AND THE LUNAR SOCIETY OF BIRMINGHAM (ii)\*

Not all the associations of Lunar Society members with the Society of Arts were happy or flattering. James Watt is probably the most famous of Lunar Society members. He never became a member of the Society of Arts (though his partner, Boulton, did) and seems to have maintained a resentment of the Society from 1778 until his death in 1819. In 1778, the Society of Arts rewarded a Mr. Green for his invention of a rangefinder. Watt claimed that he had invented the instrument in 1772 and later wrote:

I showed the instrument to all my friends at the time and among others to Mr. Smeaton. . . . A Mr. Green, in 1778, applied to the Society of Arts for a premium for the same invention, which Mr. Smeaton apprized me of, and also informed the Society of my claims, in consequence of which I was desired to attend their Committee where I informed them of what I had done and at what time. Yet the Society thought fit to award Mr. Green the premium. . . . I made no further reclamation as I perceived it was not in that court I could obtain justice; and as I dislike paper-war, I did not apply to any other. . . .<sup>1</sup>

Watt was inclined to be touchy and, no doubt, would not have taken kindly a suggestion that public award should go to the man who makes his work public.

Another expression of some dissatisfaction with Society activities can be found in the correspondence of Thomas Bentley, the partner of Josiah Wedgwood. In 1765, Bentley, Wedgwood and their friends were actively promoting the Grand Trunk Canal. Bentley wrote to Erasmus Darwin:

The more I think of it, the more I approve of an Application to the Society in the Strand. It is a subject that will please them, & their taking Notice of it may produce some good Books & raise a warm Spirit of Improvement. . . . I attended their Committees pretty frequently this Spring. . . . Doubtless this ought to be made a national Object:—And it is astonishing the Society have not attended to it before now! But they have been too much immersed in the *little* Scheme of bringing Fish to London. A National Institution ought to attend, chiefly, to Objects of general & *public Utility*.<sup>2</sup>

There is no indication that the application was made to the Society of Arts; at least, the Society's first formal recognition of canal construction was delayed until its award, in 1800, to the Duke of Bridgewater. Canals, in the early days, were controversial, and the Society wisely avoided controversy when it could. At any rate, the episode did not spoil relations between Bentley and Wedgwood and the Society. Bentley was a member of the Society, for the partnership, from 1770 until his death in 1780; after a time, Wedgwood himself became a member and finally his sons, John, Josiah jun. and Thomas also joined. From the first the partnership was friendly with the Society's secretaries. First Peter Templeman and then Samuel More sent samples of clays and of cobalt for trial at the Wedgwood factory. They visited Wedgwood's home and went on geological expeditions into Derbyshire and Cornwall with him. On 18th May, 1771, the Chemistry Committee of the Society received Wedgwood's report on a sample of clay used in porcelain manufacture at 'Stuttgart' which had been sent to him for trial. In December of the following year Samuel More sent Wedgwood some Chinese porcelain materials which had been given to the Society of Arts. In 1779 Wedgwood began a correspondence with More about the manufacture of ceramic mortars—as early as 1757, at the suggestion of Peter Shaw, the Society had offered awards for the manufacture of crucibles and retorts from English materials. Wedgwood's experiments were successful, but rather than divulge

\* The first part of this article appeared in the June issue of the *Journal*.

his secret to the Society, he began the manufacture of chemical apparatus for sale. Samuel More helped him win approval from the Society of Apothecaries of London for this venture. In 1781 William Lewis, long the practical chemist for the Society, died. Wedgwood hired Lewis's assistant, Alexander Chisholm, as a laboratory assistant; at the same time he seems also to have acquired notebooks which had been kept jointly by Lewis and Chisholm and which recorded, among other things, the results of trips and special investigations undertaken by More and Lewis.<sup>3</sup> On 27th April, 1781, the Chemistry Committee sent a sample of enamel colour to Wedgwood for trial; his report was considered on 6th December, 1788.<sup>4</sup> In June, 1789, Samuel More sent a sample of alum earth for Wedgwood's inspection; in 1793 he was asked to judge the award of a premium for a leadless glaze. By this time the sons had also begun to communicate with the Society. Its archives contain a letter of 1792 from Thomas Wedgwood, and one dating from 1801 from Josiah jun.<sup>5</sup>

Erasmus Darwin, physician, poet and inventor, had one of the most fertile minds to be found amongst the Lunar Society members. His suggestion to Bentley that the Society of Arts should be used as an ally in canal propaganda was not the only instance when Darwin used the Society. He did not become a member, but, early in his career, before he acquired other outlets for his ideas he sent them to the Society of Arts. On 4th February, 1796, Darwin sent the Society the drawing and description of a horizontal windmill and suggested that he would construct a large model, if the Society would support him.<sup>6</sup> The Society does not seem to have been interested at the time, although the Committee on Mechanics decided, on 2nd March, 1786, to advertise a premium for such a windmill. Darwin did not neglect his design; with the help of Watt, Keir and Richard Lovell Edgeworth, a mill was constructed and used by Wedgwood for grinding flints. A sketch of Darwin's mill design can be seen in his *Phytologia* of 1800.<sup>7</sup> On 8th March, 1766, Darwin had written to Peter Templeman answering questions about a carriage design of his invention.<sup>8</sup> Darwin and Edgeworth worked together on carriage design and this correspondence was continued by Edgeworth. Ultimately a Mr. Butler, coach-maker of Lichfield, patented the design.

On 19th December, 1763, Richard Lovell Edgeworth wrote to Templeman offering the Society his plan of a portable camera obscura.<sup>9</sup> This was the small beginning of a long, and on the whole, profitable relationship for both Edgeworth and the Society. Unlike most other members of the Lunar Society, Edgeworth had neither a business, a profession, nor an overriding interest in pure science by which to channel his ideas. Until he took charge of the family estate in Ireland and his care of that and of a large family (he had 22 children) gave him direction, it was the Society of Arts which provided him with ideas and with an avenue through which he might express them. He did not join the Society until 1770, lapsed, and joined again in 1778, then resigned in 1783 when he moved permanently to Ireland. For some time before he became a member, and practically throughout his membership, he showered the Society with letters. The *Museum Rusticum et Commerciale* for 1764 contains two Edgeworth letters on carriage design.<sup>10</sup> In 1765 he wrote the Society about a carriage of unusual design invented by Erasmus Darwin;<sup>11</sup> on 15th May, 1766, he informed them where they might see a phaeton constructed on the new principle under his direction.<sup>12</sup> On 20th May, 1767, he was back again with another carriage design, a type of broad-wheeled agricultural wagon.<sup>13</sup> On 26th November, 1766 and again on 2nd March, 1767,<sup>14</sup> Edgeworth wrote the Society about his 'perambulator or waywiser', a device for measuring distances; he was given a silver medal for this instrument. On 28th December, 1768, he sent the Mechanics Committee models of a fire (i.e., steam) engine and of still another new four-wheeled carriage; the Committee approved the engine, but lost the model. The four-wheeled carriage was modified by another letter on 2nd March, 1769<sup>15</sup>, and finally Edgeworth was awarded an honorary gold medal for his various inventions.

In his *Memoirs*, Edgeworth also noted that he had sent the Society a machine for cutting turnips and 'a machine for measuring the force exerted by horses in drawing ploughs and waggons, and in giving motion to machinery of all sorts. . . . This machine I explained to the Committee of Mechanics . . . in the year 1771.'<sup>16</sup> In the same year he submitted a design for 'a temporary Barn' or 'covering for stacks of corn, hay, wood, &c.' which is described by William Bailey in his *Descriptions of the Useful Machines and Models Contained in the Repository of the Society of Arts* (London, 1772, p. 129). The Society advertised a premium for a mechanical telegraph at the beginning of the Napoleonic Wars. Richard Lovell Edgeworth was sending such telegraph messages across Ireland in 1794, and he reports in his printed letter on the subject that his experiments on the mechanical telegraph had actually begun as early in 1767.<sup>17</sup>

So many were the relations between Lunar Society members and the Society of Arts that it becomes a matter for comment why the remaining five members had no connections with it. Of the five, only Joseph Priestley, Samuel Galton jun. and William Withering can be regarded as any real loss to the Society of Arts. Thomas Day, best known for his children's book, *Sandford and Merton*, which enjoyed an inexplicable popularity for many years, was not a member of any other organization except the Lunar Society, and one can only wonder what qualifications entitled him to that. Robert Augustus Johnson is the major unknown figure of the Lunar Society. A clergyman, and brother-in-law of William, Lord Craven, he became a Fellow of the Royal Society chiefly upon the recommendation of fellow Lunar Society members; he cannot be found to have contributed significantly to the deliberations of that or any other group. Why Galton, Priestley, and Withering did not become associated with the Society of Arts is hard to say. Galton, a Quaker gun-manufacturer of Birmingham, was the youngest of Lunar Society members. His papers have been lost, but indications remain that he was much interested in the kind of activities encouraged by the Society. Both Priestley and Withering have left considerable evidence of their interests in practical matters. Perhaps the presence in the Lunar Society of so many persons who carried on relations with the Society of Arts kept them sufficiently in touch with that Society's activities. For, although this paper has emphasized the individual members' connections with the Society of Arts, it is well to remember that these persons were in frequent, almost daily, communication. Many of the examples given above should suggest what is re-emphasized here. The Lunar Society of Birmingham was an organization for the mutual benefit of its members. When individual areas of interest overlapped, members co-operated. There can be little doubt that one of the areas of overlap was in the Society of Arts.

The Lunar Society was of more than local importance in eighteenth-century England. In addition to its rôle as an informal industrial research establishment, it represented a provincial clearing house, for the Midlands and North of England, of information about the practical concerns of the nation. It seems obvious that the Society of Arts played an important part in enabling the members of this body to fulfil their function.

ROBERT E. SCHOFIELD

1. James Watt, 'Account of Micrometers for Measuring Distances', *Edinburgh Philosophical Journal*, Vol. 2 (1820), pp. 121-5.
2. Thomas Bentley to Dr. Darwin, 9th November, 1765, Wedgwood Museum, Josiah Wedgwood & Sons Ltd., Burslem, Stoke-on-Trent.
3. F. W. Gibbs, 'A Notebook of William Lewis and Alexander Chisholm', *Annals of Science*, Vol. 8 (1952), pp. 202-20; and British Museum, Add. MSS. 28, ff. 309-28, 318.
4. Wedgwood wrote two letters about this matter to Samuel More. See R.S.A.

Loose Archives, D7/26. J. Wedgwood (20th May), 1787; *ibid.*, D7/27. J. Wedgwood (27th June), 1787.

5. *Ibid.*, C5/2. T. Wedgwood, 1792; *ibid.*, A16/3. J. Wedgwood, 1801.
6. R.S.A. Guard Books, Vol. A, No. 68. E. Darwin, 1769.
7. Erasmus Darwin, *Phytologia* (London, 1800), plate VII.
8. R.S.A. Guard Books, Vol. XII. No. 5. E. Darwin, 1766.
9. *Ibid.*, Vol. VII, No. 134. R. L. Edgeworth, 1763.
10. *Museum Rusticum et Commerciale*, Vol. I (1764), p. 477; and Vol. II (1764), p. 311.
11. Richard Lovell Edgeworth, *Memoirs* (London, 1820), Vol. I, pp. 160 *et seq.*
12. R.S.A. Guard Books, Vol. XII, No. 6. R. L. Edgeworth, 1766.
13. *Ibid.*, Vol. XII, No. 85. R. L. Edgeworth, 1767.
14. *Ibid.*, Vol. XII, No. 32. R. L. Edgeworth, 1766; No. 54. R. L. Edgeworth, 1767.
15. *Ibid.*, Vol. A, No. 75. R. L. Edgeworth, 1769.
16. Richard Lovell Edgeworth, *Memoirs*, Vol. I, p. 172.
17. *Ibid.*, *A Letter to the Right Hon. the Earl of Charlemont, on the Telegraph and the Defence of Ireland* (Dublin and London, 1797).

### O B I T U A R Y

We record with regret the deaths of a former Vice-President, and a Fellow, of the Society.

MR. H. S. GOODHART-RENDEL

Mr. Harry Stuart Goodhart-Rendel, C.B.E., the architect, died on 21st June, at the age of 71. He was a Vice-President of the Society from 1940-1.

He was born in 1887, the son of Harry Goodhart and Rose Ellen Rendel, daughter of the first Lord Rendel, whose surname he later assumed. After leaving Eton he went to Trinity College, Cambridge, as a student of music, and whilst there, almost by chance he discovered his gift for architectural design and decided to follow this bent instead of music. His enthusiasm for music, however, remained fresh until the end of his life, and partly conditioned his approach to composition in the solid.

Indeed, Goodhart-Rendel was not a man who could have been overlooked in any walk of life. His appearance and address by themselves were arresting; to them he added a highly developed sense of style, proportion and fitness, knowledge and the power of original expression. The architectural practice which he began in 1910 soon flourished, and after the war (during which he served with the Grenadier Guards) he became one of the most sought-after architects of his generation. He was elected to the Council of the R.I.B.A. in 1926, and served as President from 1937-9. In 1936 he was appointed Director of the Architectural Association School of Architecture, and from 1933-6 he was Slade Professor of Fine Art at Oxford.

Present opinion suggests that Goodhart-Rendel will be remembered particularly for his churches, amongst them St. Wilfrid, Elm Grove, Brighton and Prinknash Abbey Church; but he also achieved considerable distinction in a number of secular works, including, for example, St. Olaf House in Tooley Street, London (for Hay's Wharf), the Princess Elizabeth Hospital for Children at Banstead and the Brigade of Guards war memorial in Birdcage Walk. Of his writings the most outstanding are his study of Hawksmoor (1924), and *English Architecture Since the Regency* (1953), based on a memorable series of lectures at Oxford. Apart from his directly creative work, the beautiful house, Hatchlands, in which he lived for many years, and which he presented to the National Trust in 1945, remains as a memorial to his informed taste.

Mr. Goodhart-Rendel was President of the Guild of Catholic Artists from 1946-52,

of the Design and Industries Association from 1948-50, and had been a Vice-President of the Royal Academy of Music since 1953. He was elected a Fellow of the Society in 1936.

## SIR RONALD MATTHEWS

Sir Ronald Matthews, Chairman of the London and North Eastern Railway from 1938-48, and a former President of the Association of British Chambers of Commerce, died on 1st July, at the age of 74. He came of a family that had for long been prominent in Sheffield, and after his return from active service in the First World War he soon made his own name in the affairs of that city. He was elected Master Cutler in 1922—the youngest man ever to hold that office—was a Justice of the Peace for Sheffield, and took a close interest in the welfare of its University and Chamber of Commerce. He was also a Deputy Lieutenant and Justice of the Peace for the West Riding.

Matthews, who received a knighthood in 1934, served on the board of several important companies, including Thomas Cook and Son Ltd., the Gresham Life Assurance Society Ltd., and the Gresham Fire and Accident Insurance Society. At the time of his death he was Deputy Chairman of the Independent Television Authority. He became a Fellow of the Society in 1939.

## NOTES ON BOOKS

JOHN BASKERVILLE: A BIBLIOGRAPHY. By Philip Gaskell. Cambridge University Press, 1959. 63s. net

'It is not my desire to print many books; but those, books of Consequence, of Intrinsic merit or establish'd Reputation, such as the public may be pleased to see in an elegant dress, and to purchase at such a price, as will repay the extraordinary care and expense which must necessarily be bestowed upon them.' So John Baskerville stated his aims in the proposals for his Milton which followed his first book, the great Virgil of 1757. The long preparation which the Virgil had demanded was time well bestowed, for the success of the book was immediate and outstanding. The Milton which followed early in 1759 quickly ran into three editions. Baskerville's negotiations with the two universities, begun in 1758, resulted in the cutting of a Greek type for Oxford and the printing of a Bible and several Prayer-Books at Cambridge, the production of which realized what Baskerville had declared to be the extent of his ambition.

Yet by 1762 Baskerville was already so dispirited by his lack of custom that he was trying to sell his whole printing establishment abroad. In 1766 he handed over the management of his works to his foreman, Robert Martin. He returned to printing in 1769 and until his death early in 1775 remained active in it, producing in these last years four quarto classics which almost rival in beauty the early Virgil.

The vicissitudes of this career are a little obscured by Dr. Gaskell's arrangement of his bibliography. It is divided into two main sections: Specimens, Proposals and other Ephemera; and Books. In an appendix the Greek New Testaments printed at Oxford and the books printed by Martin in 1767-8 are lumped together. In the two main sections each entry contains a semi-facsimile transcript of the title-page, printed in Baskerville, which reproduces, as only our learned presses can, all the ligatures, swash letters and odd sorts of the originals. These are a delight to read and the transcripts are very accurate. I have only noticed one small error, and Dr. Gaskell has the distinction in one instance of having a transcript more accurate than his line block (no. vi). Full collations are given and a great many cancels which have hitherto escaped notice are identified. In most cases readings which distinguish the corrected from the original leaves are added. Details of the sizes of the type used are supplied, together with very full details of the paper. This is a very penetrating piece of work and it is fitting that Dr. Gaskell is able to show that wove paper was

invented as early as 1754 and that Baskerville used it in only three of the 56 books he printed.

In the first section Dr. Gaskell gives the locations of all the copies known to him. His list is by no means comprehensive. It is unfortunate that he was not able to see the Oxford University Press collection. It contains the 1770 proposals for *Orlando Furioso*, a unique copy and probably that described by Mr. Graham Pollard in his *Catalogue of Typefounders' Specimens*; two copies of the *Specimen* of 1757, one larger than any seen by Dr. Gaskell, the other unique in being printed on rough paper with horizontal chain-lines; and a copy of *The Earl of Shrewsbury's Case* otherwise only known from the British Museum copy. The Bodleian still has the Milton proposals recorded by Straus and Dent. The British and Foreign Bible Society has the second leaf of the Bible proposals, not to be found elsewhere in this country. Besides the two Yale ephemera recorded here, the printed *Check-List of the John Baskerville Collection of Perry Williams Harvey* shows that Yale also has two copies of the 1757 Specimen, two copies of the 1758 Milton proposals (not seen by Dr. Gaskell) and a copy of the first leaf of the Bible proposals. Nor are these the only omissions. The location of the books is equally unsatisfactory, for only one copy is cited for each entry. Many of the books exist in several states and no clue is given as to where any particular state is to be found. Dr. Gaskell frequently refers to the great collections formed by J. W. Hely-Hutchinson and Lord Rothschild. He does not disclose that the former was given to Birmingham University Library in 1954 and that the latter can now be consulted in the library of Trinity College, Cambridge.

The documentation is patchy. In the notes to *The Earl of Shrewsbury's Case* there is no mention of Mr. Graham Pollard's article in *Signature*, which recorded the discovery of this piece and gave reproductions from it. Similarly the reproduction of Boswell's *Verses in the Character of a Corsican in the Yale Library Associates Reports for 1936 and 1937* is not mentioned, nor the fact that this unique copy can, on evidence already in print, be traced back to Tregaskis' Catalogue of 11th December, 1911. This lack of documentation makes it difficult to assess Dr. Gaskell's own contribution to the canon. But he has certainly elucidated and increased our knowledge of the various editions of the Virgil proposals, and he records, from an advertisement, the publication in 1770 of Joseph Lieutaud's *Essay*, of which no copy has been traced.

There are twelve excellent collotype plates and a full size reproduction of the Specimen of 1777.

L. W. HANSON

GOTHIC EUROPE. *Introduction by Kurt Getzenberg, edited by Harald Busch and Bernd Lohse, with commentary on the illustrations by Helmut Domke. ('Buildings of Europe' series.) London, Batsford, 1959. 42s net*

It is not long since the Englishman John Harvey published—at Batsford's—an admirable book, both erudite and interesting, on Gothic Europe. The only serious criticism that could be offered on it was that the plates were not large enough or finely enough reproduced to be worthy of the text. Now the same publishing house issues a volume that must be regarded as the complement of Mr. Harvey's: the two hundred plates are well chosen and well produced, and the text is negligible in length and significance. (If it had to be kept down, *why* include a glossary for words like apse, capital, portal and rose window?)

The whole book is German, and was printed and bound in Germany. We must welcome, remembering the claims of German art-historians before the war, the first words of the introduction: 'The Gothic style originated in a small, clearly defined region in North-Eastern France'. Further, we must welcome the wise selection of plates, that gives us enough of Naumburg and Marburg, but also a noble representation of Gothic art in France, England and Spain. This is frankly a picture-book, but in its *genre* it is a good one.

JOAN EVANS

## FROM THE JOURNAL OF 1859

VOLUME VII. 5th August

## AN AMERICAN HOTEL

The *New York Journal of Commerce* states that the new Fifth-avenue Hotel in New York covers sixteen 'lots' of ground, is seven stories high, and has an elevation from the cellar to the roof of 407 feet. The front, on Fifth-avenue and Broadway, is 202 feet; on Twenty-third-street, 215 feet; and on Twenty-fourth-street, 196 feet. The main entrance is on the Fifth-avenue. On the right of this is the grand stairway, opening from the hall, and on the left is the business-office. In the rear of the main floor is situated the billiard and chess-rooms on the one side, and the gentlemen's exchange and reading-room on the other. There will also be attached to the house a Parisian restaurant, not only for the guests, but as a place where other gentlemen and ladies may dine with their families or friends, genteelly and economically.

On the second floor are the public and private parlours, opening into a corridor 613 feet long, running the entire length of the building. At the end of this corridor is the grand promenade, nearly 30 feet wide, uniting with grand dining-hall at its western extremity, and presenting, with its double rows of columns, a magnificent *tout ensemble*. The grand dining-hall is 80 feet long, 60 feet wide, and 21 feet high, lighted with elegant chandeliers hung from a frescoed ceiling supported by Corinthian columns. Between the latter, on one side, are placed magnificent mirrors; while, between the same, on the other, are placed beautiful French buffets.

The house contains eight large public parlours, 120 private ditto, four dining and tea rooms, 420 chambers, and other rooms for servants, &c. Nearly all of the principal chambers have baths and water arrangements complete, there being fully 100 baths in all.

To facilitate communication between the several storeys, there is provided a luxurious car, or ladies' carriage, which is capable of seating ten persons, and is caused to glide from the lowest floor to the uppermost storey; this car is propelled by steam power, passes up a revolving spiral shaft near 100 feet in height, and is provided with a most efficient hydraulic device for ensuring the safety of persons within it, in case of the breaking of any of the hoisting tackle.

The whole building will be supplied with an independent gas apparatus, costing about 6,000 dollars, by which the expense of illumination, as already proved in actual service, is reduced one-half in comparison with the city charges. The gasometer for the Fifth-avenue Hotel holds 63,000 cubic feet, and will supply 3,000 burners. Iron tanks are used instead of the ordinary cisterns.

The plan of ventilation is very effectual, the heat of the furnaces being conducted into flues extending over the house, thereby creating a strong draught, and exhausting the atmospheric impurities of the various apartments.

The building is heated by steam, for which three boilers, each 22 feet in length, and nearly 5 feet in diameter, are provided. From these the steam is conducted by pipes, all over the building, condense steam being carried back to the boilers by a return flue. The boiler and gas-house occupy a distinct building wholly detached separate from the main structure.

Among other novel and curious kitchen apparatus are ten monstrous steam-kettles, each weighing nearly 1,000 lbs., for boiling vegetables, &c. All the various machinery for cooking, washing, ironing, and other processes, is in a building specially constructed, and of sufficient capacity to supply the wants of 1,000 guests.

The entire cost of this establishment will exceed one million dollars.

